

THE
DIAGNOSIS AND TREATMENT
OF
DISEASES OF WOMEN,

INCLUDING THE DIAGNOSIS OF PREGNANCY.

FOUNDED ON

A COURSE OF LECTURES DELIVERED AT ST. MARY'S HOSPITAL MEDICAL SCHOOL.

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TO
SIR CHARLES LOCOCK, BART., M.D.

FIRST PHYSICIAN-ACCOUCHEUR TO HER MAJESTY THE QUEEN,

IN ADMIRATION OF HIS PROFOUND KNOWLEDGE

AND GREAT PRACTICAL SKILL

IN THE

DIAGNOSIS AND TREATMENT OF THE DISEASES OF WOMEN,

THIS WORK IS

RESPECTFULLY DEDICATED,

BY HIS OBLIGED,

AND VERY FAITHFUL SERVANT,

THE AUTHOR.

PREFATORY AND INTRODUCTORY.

THE present work, founded on a course of lectures delivered at St. Mary's Hospital Medical School, is intended to form an introduction to the study of the diseases peculiar to women. The first and principal part is devoted to the elucidation of the diagnosis of these diseases, including the diagnosis of pregnancy; in the second part of the work the treatment of these diseases is considered.

The primary object of the work is to afford increased facilities for diagnosis; and a peculiar arrangement of the subject, adapted for the purpose of carrying out that object in the most efficient manner, has been here followed. It may be necessary to explain why it has been thought advisable to give this great prominence to the question of diagnosis, and why other questions have been made subservient to it. Very little consideration will show how completely subsidiary to questions of diagnosis are all others likely to present themselves to the student in his early attempts to investigate disease, of whatever kind, and wherever situate. In those admirable lectures on clinical medicine to which it was my privilege to listen, Dr. Walshe quotes the saying of Demosthenes, who, in answer to the question, what was the first part of oratory? answered, delivery; and the second? delivery; and the third? still delivery. 'If I were similarly asked,' says Dr. Walshe, 'what is the first object to be attained by clinical observation? I should reply, diagnosis; and the second? diagnosis; and the third? still diagnosis.'*

This is most true. Without diagnosis no advance can be made

* *Lancet*, 1849, vol. i. p. 2.

but on the imperfect basis of surmise and conjecture. Everything, in fact, turns on the diagnosis, and, once the diagnosis has been made, the path is comparatively clear. In the words of Dr. Meigs, 'Diagnosis is in practice like Captain Greatheart in Bunyan, encountering and overthrowing all obstacles, so that even Apollyon himself could by no means oppose a bar to his habit in his practice of succeeding always.' *

In the study of no class of diseases do we meet with so many practical illustrations of the truth of what has been stated in reference to the importance of diagnosis, as in that to the consideration of which the following pages are devoted. A very large proportion of the cases coming under the notice of members of the profession are cases in which diagnostic knowledge as to these particular diseases is specially called for; moreover, this is a department of practice in which mistakes in diagnosis are very frequently disastrous to the patient, or destructive to the reputation of the practitioner. The very important question of the diagnosis of the presence or absence of pregnancy is of itself one for the practical dealing with which a very extensive and complete knowledge of the diseases of women generally is absolutely essential. The subject of the diagnosis of pregnancy has been fully considered in the present work, side by side with that of the disorders or conditions which are capable of simulating it. The importance of diagnosis, then, leads us to give it the first consideration.

In regard to the mode in which the subject is considered, the first part of the work—that treating of diagnosis—differs from most other systematic treatises on the subject of diseases of women, symptoms, not pathology, having been made the basis of the arrangement. This arrangement and mode of considering the subject of the diagnosis has been found best adapted for carrying out the object of the work, inasmuch as it is the one actually followed at the bedside. The difficulties encountered by everyone in the first attempt to investigate disease clinically are considerable; the subject is not presented to us at the bedside pathologically, and to suit our convenience. It is the symptom, the sign,

* *Females and their Diseases*, Philadelphia, 1848, p. 129.

with which we have then to deal; and before a diagnosis can be made, we must know how to give to each of these signs its proper signification. Every practitioner who has acquired facility in diagnosis possesses, in his own mind, a sort of dictionary, to which he, from time to time, refers, in order to ascertain what diagnostic value a particular sign possesses, when present under such and such circumstances; while forming a conclusion in any particular case, he passes rapidly in review all the morbid conditions or diseases with which he has known the sign in question to be associated, carefully bearing in mind the many exceptional cases to general rules which his predecessors have left on record, or which have been observed by himself. To the student, however, the disease or morbid condition presented by the patient speaks in an unknown language—one which must be learnt before a diagnosis can be arrived at; and thus it becomes an object of primary importance to the investigator of disease, that means should be available by which the value of symptoms and signs, as diagnostic of certain affections, may be duly estimated. The plan followed in the present work will, it is believed, offer facilities for the kind of valuation required, while it further assists the observer by putting the question fairly: all the possible causes of certain symptoms being set forth, it is less likely that important disorders will altogether escape attention.

The plan of arrangement followed in the present work is not altogether a novel one; its utility and practical advantages have been tested as applied to other departments of medical enquiry. In the classical treatise of the late Dr. Montgomery, on the 'Signs and Symptoms of Pregnancy,' also in the work of my friend Dr. J. Russell Reynolds, 'On the Diagnosis of the Diseases of the Brain and Spinal Cord,' the plan adopted is essentially the same; and in the well-known work of Sir Charles M. Clarke, the method of classification of the disorders there treated of is similar to that which is here applied to a somewhat larger field of enquiry.

The difficulties encountered in carrying out the proposed plan have been considerable. In reference to a few of the subjects which are here treated of, it has been found almost impossible, indeed, to avoid adhering to the methods of classification more ordinarily adopted. And the method adopted necessarily involves

a certain amount of repetition. The particular disadvantages which are inherent to the method of treating the subject here followed, are, however, really trifling, and will not, it is believed, be found to counterbalance the very obvious advantages and facilities for diagnosis which it secures. The diagnosis has had the chief place assigned to it; other considerations have been necessarily to a certain extent, and, it is hoped, usefully, sacrificed. By means of the Index it will be found easy to ascertain, respecting any disease, what are the symptoms usually associated with it, and thus to obtain an idea of the disease in its entirety.

The subject of the pathology of the diseases peculiar to women has received a considerable amount of attention in the present work. The observations on pathology will be found in some cases incorporated with those on diagnosis; in some instances they have been placed distinct and separate; and in other instances the pathology has been considered in conjunction with the treatment. The great space devoted to the diagnosis has rendered a fuller consideration of the pathology impossible, without extending the work beyond convenient limits.

With reference to certain much debated questions in uterine pathology, the opinions expressed in the following work have been arrived at after an impartial consideration of the facts and arguments put forward by various eminent authorities, corrected by actual observation of cases which have occurred in my own practice. I have endeavoured fairly to represent opinions which are not in unison with my own.

The second division of the work contains a concise account of the treatment of the diseases of women. In cases regarding which differences of opinion exist, while I have not hesitated to express decidedly my own views on the subject, I have, at the same time, done my best honestly and impartially to set before the reader the two sides of the question. It is well known that views apparently the most opposite have been held by various eminent writers on the subject of the treatment of uterine diseases; I believe, however, that with some few exceptions, which need not now be more particularly alluded to, these differences of opinion are not so great as they appear to be; in practice, certainly, the treatment recommended by eminent practitioners holding different

views on the subject, does not vary to the extent which might be anticipated. The great interest attaching, at the present moment, to the treatment of certain diseases of the ovaries, has necessitated a rather lengthened discussion of this subject.

In conclusion, I venture to express the hope that the work now submitted to the kindly judgment of my professional brethren will facilitate the acquirement of knowledge in this department of medical practice, and thus prove in some degree serviceable both to the profession and to the community at large.

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DISEASES OF WOMEN.

PART I.

DIAGNOSIS.

DIAGNOSIS.

PRELIMINARY REMARKS.

On Diagnosis in general, and the Method to be pursued in attaining it.

IN order that time may not be unnecessarily lost, it is very important, before commencing any particular investigation, to be aware not only of the precise nature of the object to be sought, but also of the best method of seeking it, and of overcoming the practical difficulties which lie in the way of its attainment. A short space will thus be not unprofitably devoted to the question of diagnosis in general, and the method to be pursued in attaining it.

The patient is before us. It is required to determine the nature of the disease under which she is labouring. The diagnosis can only be made out by a critical survey and comparison of the *data* afforded by observation and enquiry. These data have to be acquired before we can go a step further, and until they are all before us, no attempt can be made to solve the problem. The acquisition of these data, at all times a matter of difficulty, is often rendered more so by the perversity or stupidity of patients; not seldom great care is necessary to discriminate between right and wrong on mere questions of fact, owing to the desire of the patient to deceive. More often the difficulty consists in this, that the patient resolutely persists in stating the case in her own way, or in endeavouring to elicit an opinion before the observer is at all in a position for coming to a decision. Again, in another class of patients, data of importance are kept back intentionally: there is a *suppressio veri*, although there may be no *allegatio falsi*. The 'art of observing,' which the student will do well to regard

as the alphabet of diagnosis, can only be acquired by patient and systematic attention to the subject. In 'taking a case,' as it is called, at first the student cannot be too particular or too minute, but above all he must be systematic. It is only when he has had considerable experience in the art of acquiring data, that this fulness and minuteness of observation can be dispensed with, and then only in reference to certain heads or divisions of the subject.

The prominent symptoms of the case will almost always indicate the particular organ or system of organs in reference to which more minute enquiries and more careful examination are needed, but it is never safe to allow the attention to be drawn exclusively to these. As the experienced general, before proceeding on his march, takes care to leave no strong occupied fortresses in his rear, by irruptions from which his efforts may be weakened or paralysed, so the wary observer will not hastily and unadvisedly venture on a particular road or branch of his enquiry, and proceed to form his opinion, before he has taken a general view of the question, and has explored and removed any sources of fallacy. In private practice it is often necessary or advisable to listen to details which are uninteresting, and quite devoid of importance in respect to the value of the information which they convey, and it is not always possible to pursue the enquiry in the order or with that degree of minuteness which may be wished for. This is, however, not the case at the early period of the student's career, when both leisure and opportunity are afforded for the necessary minuteness of observation; a careful and systematic examination of cases is then always possible.

'How to observe,' and 'what to observe,' are the two first objects of attention to the clinical student, and the earlier he begins to observe for himself the better; for until the attempt is made, no conception can be formed of the nature of the difficulties to be surmounted. A valuable work published by the London Medical Society of Observation, entitled 'What to Observe,'* should be in the hands of every clinical student, and the particulars of the 'case' should be 'taken' always in the order therein indicated. An error committed by most observers at the outset of their clinical studies, and which is generally afterwards perpetuated, is a more or less complete neglect of negative signs. Now negative signs are often quite as important in a diagnostic point of view as positive ones. The experienced observer may know at once how

* 2nd edit. London: Churchill.

far special facts can be safely neglected, but the student having yet to learn which are important, which trivial, must pass over none. The beginner will find that the labour bestowed by him on the investigation of the minutest details of the case before him will not have been thrown away. A habit of exactitude has been acquired, a habit of system has been induced, invaluable in so far as they tend to exactitude in the results obtained.

While thus occupied in the acquirement of the art of observing, the student learns much which it is impossible to possess himself of in any other way. The constant practice of putting questions familiarises him with the art of cross-examination, and makes him acquainted with the best method of securing correct answers. It is always best to leave as little as possible for the patient to do. The questions put as to matters of fact should be put so as to require a simple negative or affirmative on the part of the patient, and it is hardly necessary to say that leading questions can elicit no information to be depended upon. When, however, the patient's sensations or feelings are matter of enquiry, it is the better course to allow them to be described by the patient, merely insisting on the arrangement of these in a proper chronological order.

In the next place it is well to be aware that facts stated, often do not warrant the interpretations put upon them by the patient. Thus, a patient may say that his or her father died of consumption, but it is not to be immediately concluded that such was the case. It must be ascertained what are the grounds for this opinion, and, if possible, corroborative evidence, *pro* or *con.*, must be obtained. In short, the statements of a patient with reference to any disease are valueless unless accompanied by a description of the symptoms and course of that disease. In the case just supposed, if it be found that the father died at the age of twenty-eight, after an illness of one year or upwards, which began with hæmoptysis and cough, and was followed by purulent expectoration, wasting, night sweats, and so on, the assertion that the individual in question really did succumb from the disease called consumption may be considered as nearly conclusive. These matters may seem of little importance; but, seeing how great are the difficulties which now and then present themselves in the attempt to form a diagnosis, no information is to be despised. The scale is often turned in favour of a particular view of the case by a fact in itself trifling, but which, in conjunction with others, forms an element in the consideration of very great value.

The account given by the patient, and proved so far as possible by cross-examination to be correct, furnishes us with data of importance. Next come the data derived from actual inspection and observation of the patient. Respecting this class of facts a greater degree of precision is attainable, and there are fewer sources of fallacy to be encountered, or, to speak more correctly perhaps, the sources of fallacy which exist are more capable of removal. Here, also, it is absolutely necessary that the description noted down by the observer be systematic in its arrangement. Minuteness of description is very necessary, for here, as in the former case, the clinical observer cannot at first be aware of what is important and what insignificant. The touch must also be trained and exercised, and the art of auscultation practised, and the results obtained by these methods of observation concisely noted down.

In very many cases the data for diagnosis—the facts on which an opinion is to be formed—are few in number. This renders it necessary, in the first place, to give great precision to the facts which are available or obtainable; and, in the second, to be aware of the exact diagnostic value of particular facts, as indicative of the presence of certain conditions or diseases. It is important to consider separately the value of each sign and symptom, and to be aware not only of the diagnostic value of these separate signs, but also of the proper inference to be drawn from their presence in various combinations one with the other. The value to be attached to a particular sign is generally almost entirely dependent on the association of that sign with certain others; and the value of particular signs necessarily varies in every case.

One of the quicksands to be avoided by the clinical enquirer is a too early decision as to the nature of the case—a decision formed on a limited number of data. It is extremely important that the case should not be prejudged. The student whose mind is duly impressed with the fact that a particular symptom may be associated with six or a dozen different diseases or conditions is evidently far less likely to make a serious mistake in diagnosis than one who has studied the subject in a less comprehensive manner, and who is disposed for that reason to attribute more pathognomonic value to certain indications than they really possess. The greater the number of data for diagnosis, the more likely is it that the diagnosis will be accurate. Occasionally it happens that the data obtainable are very few in number, and the share which conjec-

ture is called upon to take in the decision is not inconsiderable. This is more especially the case in reference to the class of diseases now to be treated of. The practitioner duly impressed with a sense of his responsibility and duty to his patients will not allow himself to be deterred by a false delicacy from pursuing his enquiries, and using those methods of examination which may appear necessary; nor will he consent, in an important case, to risk his reputation as a scientific observer by giving an opinion for the formation of which adequate opportunities have not been afforded. Very great difficulties may be now and then experienced in determining how far to go in a particular case; and the objection is constantly liable to arise, that such and such things might have been discovered by a particular mode of examination, had it been practised, and for the perception of which all other methods of examination were inadequate. Respect and consideration for the opposite sex will determine us in setting a limit to such investigations and enquiries as may tend to outrage the feelings of the susceptible patient where such investigations are not absolutely called for; and if there be two equally good ways of obtaining information, to one of which the patient has a strong objection, the other should always be preferred.

In no class of diseases is it more necessary to be careful in the acquirement of data for diagnosis than in the case of the diseases of the generative organs of women; and although the *mode* of observation necessary to be employed is in some respects peculiar, involving as it does the occasional use of special instruments for the assistance of the senses in the acquirement of particular data, yet the 'method' to be followed in observing is the same in this as in all other classes of disease. A rigid adherence to this particular method of observation—a fixed determination to be led away by no prejudgment of the case to neglect other, apparently less important, details, which may offer themselves to our notice—is the only sure method of avoiding mistakes and of ensuring accuracy of diagnosis. Wearisome and tedious though it may be to the student to consider details which may ultimately prove to have no immediate bearing on the facts of the case before him, he cannot safely neglect them. He will in the end be amply repaid by the superiority he will soon perceive that he possesses in diagnostic tact and acumen over others who have preferred the shorter, the easier, but the less certain method of investigation, and whose knowledge is correspondingly limited, imperfect, and superficial.

We may now proceed with the investigation actually before us. This, the first part of the work, and which treats of 'diagnosis,' is divided into two sections. In the first section will be considered the data for diagnosis obtainable without physical examination of the patient, and in the second, the data for diagnosis obtained by means of physical examination.

SECTION I.

DATA OBTAINED WITHOUT PHYSICAL EXAMINATION.

THESE data will be considered in the following order:—Age of the patient; sexual relations; disorders of menstruation; unusual discharges of blood from the generative passages; substances expelled from the generative organs; discharges of non-sanguineous character; disorders of micturition; symptoms referable to the rectum; abnormal sensations referable to the generative organs, including pruritus, pain of various kinds experienced during menstruation or at other times, and referable to the internal and external generative organs, motions, and pseudo-motions felt by the patient within the abdomen; and nausea and vomiting.

CHAPTER I.

THE AGE OF THE PATIENT.

Pregnancy; earliest and latest Age at which it occurs—Procreative Age in the Man—
Uterine Cancer—Mammary Cancer—Cauliflower Excrescence of the Os Uteri—
Fibrous Tumours and Fibrous Polypi of the Uterus—Diseases of the Ovaries.

THE deductions to be drawn from the simple fact of the *age* of the patient are not very numerous or very decisive, but the fact may, taken with others, be of extreme importance in a diagnostic point of view. Particular diseases are not always limited to certain ages; yet the range of age within which a certain disease is in the habit of showing itself is for the most part constant—sufficiently so, at least, to enable us to lay down general rules in reference to the *diagnosis*.

The age of the patient is important, looking at the matter from

another point of view. The *treatment* to be pursued must always be very much modified by the age of the patient; the condition of the woman is a very different one during the period when the sexual organs are in a state of activity, and after that period of activity has come to an end. It is a fact that, whereas during the period of sexual activity a certain morbid physical condition of the generative organs may be attended with serious inconvenience, after this period is over the symptoms and inconveniences arising therefrom may undergo such abatement that treatment is very frequently quite unnecessary. There are often cases in which, for this reason, we anxiously await the arrival of the period of 'sexual involution,' as it has been termed, as a time when the condition of the patient may undergo a favourable change. It is sometimes a question whether the disease will or will not destroy the patient before this, the desired haven, have been reached. So far, then, it will be evident that the age of the patient may form a very important and essential element in the considerations on which our decision as to the propriety or utility of particular methods of treatment rests.

The more important conditions or diseases in the diagnosis of which the age of the patient may be a material question will now be considered.

Pregnancy.—Between the ages of 15 and 45—in this country, at least—fecundation occurs, and where child-bearing takes place before this period or subsequent to it, the case is to be regarded as exceptional. It is important, however, to be aware of the extreme limits within which the occurrence of pregnancy may be considered possible. It is necessary for the moment to consider pregnancy apart from menstruation; for although, in the large majority of instances, the period during which the woman is liable to pregnancy coincides with that during which menstruation is observed to take place, it is not always so. Many facts available for the determination of this question—Within what limits is pregnancy possible?—will be found in Dr. Montgomery's well-known work,* and also in Dr. Tanner's more recent treatise.† The chief of these facts, however, it may be well to mention.

The *earliest* substantiated case in this country is probably that recorded by Mr. Robertson, in which pregnancy commenced in

* *An Exposition of the Signs and Symptoms of Pregnancy*, by W. F. Montgomery, M.D., London: Longman, 2nd edit. p. 310 et seq.

† *The Signs and Diseases of Pregnancy*, by T. H. Tanner, M.D. Lond. 1860.

the 11th year; another is *said*, by another authority, to have occurred in the 9th year. In a case cited by Dr. Montgomery as having been observed in the United States, pregnancy took place in the 10th year. Dr. Goodeve, of Calcutta, reports that the earliest age at which he had known a Hindu woman bear a child was 10 years: he had heard of one at 9. The experience of Dr. Montgomery himself did not furnish him with an instance in which pregnancy commenced earlier than the 14th year. Dr. Wilson, of Glasgow, has only recently recorded a case in which conception took place at the age of 12 years and 9 months.*

The *latest* age at which pregnancy has been observed in this country is 54. The number of cases of pregnancy after the age of 45 is, however, small. Thus, of 10,000 cases observed at the Manchester and Salford Lying-in Hospital by Mr. Robertson, only fifty-one were over 45 years of age; the distribution of these being as follows:—

In the 46th year, 12 cases	In the 50th year, 9 cases
„ 47th „ 13 „	„ 52nd „ 9 „
„ 48th „ 8 „	„ 53rd „ 1 „
„ 49th „ 6 „	„ 54th „ 1† „

In a volume recently issued by the Registrar-General of Scotland are contained certain facts relating to this question which came out in preparing the Glasgow table. Two women became mothers at the age of 51, four at the age of 52, and one mother was registered as having given birth to a child in the 57th year of her age.‡

In France, the possibility of pregnancy at the age of 58 was decided judicially in one case. In this country, in respect to an important case decided in the Court of Chancery, no evidence could be brought forward to the effect that pregnancy at the age of 60 was possible. Dr. Montgomery declares that no case of pregnancy has occurred, of the particulars of which he has reason to be satisfied, at an age later than the 54th year; but this able authority goes on to state that he ‘by no means pretends to deny the possibility of such occurrences.’ Recorded instances of late pregnancy it is right to mention. Thus Devergie quotes a case of pregnancy at 58. Casper states that Marsa, a physician in Venice, treated a woman aged 60 for dropsy, which

* *Ed. Med. Journ.* Oct. 1861.

† Robertson, *On Physiology and Diseases of Women*, &c. p. 183.

‡ *Times*, Feb. 12, 1862.

proved to be pregnancy.* Capuron cites a case of pregnancy at 65.

The cases in which it is especially necessary to be aware of the possibility of the existence of pregnancy are those in which a long term of married life has passed over without conception having taken place: the woman has arrived at a 'certain age,' and the mere fact of her having remained childless, either altogether or for some time previously, tends to put the practitioner off his guard. In addition to this latter circumstance, the other signs of pregnancy have occasionally been found absent in these cases of pregnancy at an advanced period of life. In a remarkable case occurring in Dr. Montgomery's practice, the patient first became pregnant in the 25th year of her married life. In another, pregnancy took place 17 years after a former delivery. Van Swieten records a case of pregnancy after an interval of 20 years; and Dr. Merriman another in which the interval was of equal length. It appears that pregnancy may even occur after the catamenia have ceased, and where there is, for this reason, an additional motive for deciding against the possibility of pregnancy, as in a case of Dr. Merriman's also quoted by Montgomery.

All these facts are sufficient to show that, within certain limits, neither the advanced age of the woman, nor this combined with the circumstance that she has arrived at this age unfruitful, or with the fact that she has remained unfruitful for a long series of years, is sufficient to exclude pregnancy from the consideration; and, in a doubtful case, other data must be sought for before the decision can be arrived at.

Procreative Age in the Man.—There are two parties necessary to the production of pregnancy; and it is incumbent upon us, therefore, to determine the limit within which the man is capable of fertilising the woman.

In the case of the man no such exact limit can be placed on the duration of sexual power. Müller remarks: 'The duration of the reproductive power in man cannot be so exactly defined. In general, it continues longer than in woman; and not unfrequently very old men manifest a remarkable degree of virile power.'† Cases are on record in which men who have attained to the ages of 81 and 83 have at this advanced period of life become fathers; and the often-quoted instance of 'Old Parr' must not be forgotten,

* *Handbuch der gerichtlichen Medicin. Biologisch. Th.*, Berlin, 1858, p. 104.

† *Physiology*, Baly's Trans. p. 1488.

who, it is stated, did public penance for misbehaviour, of which he was 'capable,' when over 100 years old.*

It must not then be hastily conceived that pregnancy is impossible because of the advanced age of the husband; nor, on the other hand, if it be proved, on other grounds, to be present, must the wife necessarily be considered unfaithful because the husband is old.

As a circumstance also having some relation to a possible view of a particular case, it is worthy of remark, that a very considerable degree of debility or disease in the man is not incompatible with the existence and exercise of procreative power.

Cancer Uteri.—Cases of uterine cancer are noticed, for the most part, after the age of 30. The larger number of cases occur between the ages of 40 and 50, and about 1 per cent. of recorded cases occurred after the age of 70.

The following table is given by Dr. West,† as containing the results of his own observations combined with those of Lebert, Kiwisch, Scanzoni, and Chiari:—

Between 25 and 30 years	.	.	.	26 cases
" 30 " 40 "	.	.	.	120 "
" 40 " 50 "	.	.	.	183 "
" 50 " 60 "	.	.	.	73 "
" 60 " 70 "	.	.	.	35 "
Above 70 "	.	.	.	5 "
Total				442

In 156 cases reported on by Mr. Sibley,‡ the average age at which the disease began was 43·28.

Before the age of 25, then, uterine cancer is a rare disease. Dr. Churchill states that he has witnessed a fatal case in a woman under 25; and the same authority refers to two other cases—one by Wigand, in which the uterus was affected with scirrhus at the age of 14; and another by Mr. Carmichael, fatal at the age of 21. In Madame Boivin's table, twelve cases out of 409 are set down as under 20 years of age; but these cases of early cancer related by Madame Boivin are justly objected to by recent authorities, as not being cases of cancer at all. The youngest of Scanzoni's cases was 23 years old.

The opinion of the best observers—of Dr. Walshe, of Mr. Paget,

* Montgomery, *op. cit.* p. 321, 2nd edit.

† *Lectures on the Diseases of Women*, 2nd ed. p. 368.

‡ *Med.-Chir. Trans.* vol. xlii.

and others—is, that the proclivity to cancer generally increases steadily and progressively with the age. It is to be remarked that, after the age of 50, the frequency of *cancer uteri* appears to diminish; but the diminution is rather apparent than real, for it must be remembered that the proportion of individuals living, and therefore available, so to speak, for cancer, every year becomes less and less.

Mammary Cancer.—The period of life most of all liable to this disease is that between 45 and 50. Of 158 cases referred to by Mr. Paget,* only two cases occurred between 20 and 25, and forty between the ages of 45 and 50. The disease has been seen but very rarely before puberty. Hence the probability of a tumour of the breast turning out to be of a cancerous nature is small if the patient be less than 25 years old, but after that age it becomes greater until after the age of 50.

The above observations refer to scirrhus or hard cancer of the breast. Medullary cancer of this organ is so rare that, according to Mr. Paget, only two cases have ever come under the notice of Mr. Lawrence.

Cauliflower Excrescence (epithelial cancer) of the Os Uteri may be observed, according to Sir C. M. Clarke, at all periods of life after the age of 20. This author mentions a case fatal at the age of 20.†

Fibrous Tumour and Fibrous Polypus of the Uterus.—These two affections resemble each other not only in their intimate structure, but in respect of their frequency at different ages. The particular period of life in which these growths have been observed is that during which the uterus is in the highest degree functionally active.

Scanzoni considers that the fibrous tumour of the uterus is most common between the ages of 35 and 45; but of eighty-seven cases tabulated by Dr. West, twenty-one cases occurred between the ages of 20 and 30.

The *symptoms* of the two diseases were observed by Dr. West in sixty-one cases, in reference to the time of their commencement; and it was found that in two cases they began under the age of 20, while in eleven cases they began between the ages of 20 and 30.

It is highly probable that the fibroid tumour of the uterus is very frequently present in cases where its existence is not suspected; for, in certain positions of these tumours, the symptoms

* *Lectures on Surgical Pathology*, vol. ii. p. 326.

† *On Diseases of Females*, vol. ii. p. 62.

are not such as to attract particular attention. For this reason, we may perhaps be justified in presuming that the frequency of the disease before the age of 30 is not indicated in most tables given on this subject. The statement of Bayle, to the effect that the fifth part of women above 35 years old are affected with fibrous tumour of the uterus, does not appear to be borne out by more recent pathological enquiries. The disease is of frequent occurrence undoubtedly, but the case is overstated by Bayle.

Diseases of the Ovaries.—Ovarian cysts containing hair and fat, with or without bones and teeth, are not very uncommon, according to Kiwisch, between the ages of 6 and 10; and they may, of course, be found present at later periods. The same author states that the medullary and the alveolar are the only forms of cancer of the ovaries which are met with in the early period of life. The practical deduction from this is, that if ovarian disease be met with before the age of 18, it is more likely to be of malignant character than when such disease is detected in a patient over the age of 20.

With maturation of ova and enlargement of the Graafian follicles, coincident with the advent of puberty—in some extremely rare cases, prior to this period—arises the liability to that form of disease of the ovaries known as *encysted dropsy*. The disease in question occurs with greatest frequency between the ages of 20 and 40.

The following tables from Mr. Clay's valuable and comprehensive collection of statistics on ovariectomy* will be found useful as giving information under this head:—

Table showing Ages of 281 Women on whom the operation of Ovariectomy was performed.

Years	17	18	19	20	21	22	23	24	25	26	27	28
Cases	2	4	5	10	10	7	8	11	11	9	9	14
Years	29	30	31	32	33	34	35	36	37	38	39	40
Cases	11	14	9	12	11	2	9	4	9	11	8	8
Years	41	42	43	44	45	46	47	48	49	50	51	52
Cases	4	5	2	1	14	5	6	1	4	4	5	5
Years	53	54	55	55 to 60			Above 60			Total 281		
Cases	—	—	—	13			4					

* *Chapters on Diseases of the Ovaries, Translated from Kiwisch's Clinical Lectures, with Notes and an Appendix on the Operation of Ovariectomy*, by John Clay, Lond. 1860, p. 128.

Table showing the Duration of the Disease in 193 cases of Ovariectomy.

Duration	{	6 and 12 mos.	1 and 2 yrs.	2 and 3 yrs.	3 and 4 yrs.	4 and 5 yrs.	5 and 6 yrs.	6 and 7 yrs.	7 and 8 yrs.	8 and 9 yrs.	9 and 10 yrs.	Above 10 yrs.	
No. of Cases		32	60	28	19	11	15	5	4	1	3	15	Total 193

Dr. Ashwell and Kiwisch have reported each a case in which the disease began at the age of 14; and, pathologically, it has been observed in infancy.

Such are the chief facts in relation to the age at which the diseases or conditions mentioned may be expected to be observed.

CHAPTER II.

SEXUAL RELATIONS.

Diseases particularly observed, respectively, in Single Women, in Married Women, and in Women who have borne Children.

FROM facts concerning the sexual relations of the patient we may occasionally derive useful information and assistance in the attempt to make a diagnosis.

The condition of the patient, her proclivities or the reverse to certain diseases, may vary according as she is *single* or *married*, according to the circumstance that she *has borne children* or is the subject of *sterility*. Each of these conditions, and especially the latter, requires a separate notice.

The Patient is Single.

Statistics show that *cancer of the uterus*, one of the most formidable of the diseases to which the female generative organs are exposed, is far less common in single women. Thus, of 134 cases cited by Dr. West, only three occurred in unmarried individuals. According to the best authorities, also, single women are not so prone to *ovarian cystic disease* as those who are married. Dr. Ashwell, it must however be mentioned, was of a contrary opinion.

But, on the other hand, there are certain diseases to which single women (understanding by this term those not indulging in sexual intercourse) appear to be more liable than the married. Thus Safford Lee states that '*tumours of the uterus* are more frequently observed in virgins and those who have never borne children than in the married.' Dr. Lever considered *polypus uteri* to be more frequent in the former than in the latter, in the proportion of seven to three. It is usually considered that single women are more liable to *hysteria* than those who are married. This is open to question.

The Patient is Married.

Encysted dropsy of the ovaries, as already remarked, is more frequent in married than in single women; thus, of 136 cases in which this disease existed, Safford Lee found that 88 were married, 11 widows, and 37 single. It seems probable that the greater prevalence of this disease in married women is connected with that inordinate growth and development which take place in the various structures of the ovaries during pregnancy, or with the increased flow of blood to these organs dependent on sexual excitement. A very striking instance of the result of continued and sustained fulness of the nutritive vessels of the ovary is presented to us in the corpus luteum of pregnancy.

The Patient has borne Children.

The fact that the patient has had children leads us to look for certain alterations or diseases which are not met with under other circumstances. Many of the disorders and derangements with which we have to do are connected more or less directly with the effects of parturition. After the uterus has expelled its contents, the period of utero-gestation having expired, the return of the uterus to its proper size is frequently delayed, and this organ occasionally remains large and unwieldy for a longer or shorter time. The consequence of this is, that the position and the shape of the uterus are liable to undergo certain changes, these changes having for their effects grave inconveniences and troublesome disorders. The phenomena resulting from this *defective involution of the uterus, after delivery*, become thus exceedingly important and interesting to us as medical practitioners; this condition forms an important element in many cases likely to come before us.

The various affections known under the general term *prolapsus* of the uterus, *flexions* and *versions* of the uterus, are some of the chief of the conditions liable to be met with in women who have had children; and they are connected more or less intimately with an enlarged condition of the organ. Thence also arise, in many cases, *disorders of menstruation*, *leucorrhœa*, and secondary constitutional affections; also secondary mechanical derangements of the functions of the neighbouring organs, difficulties in defæcation, in micturition, &c.

Another affection liable to present itself under these circumstances is *inversion of the uterus*—a condition hardly ever noticed,

indeed, except as a consequence of pregnancy; traction on the umbilical cord and placenta soon after the expulsion of the child, and whilst the uterus is flaccid, large, and its orifice widely open, being supposed to be the most common cause. In rare instances, in single women affected with fibrous polypus of the uterus, the tumour, after dilating the uterine cavity, has been known to draw the uterine wall inwards and downwards, and inversion has been thus produced.

Incontinence of urine is an occasional result of pregnancy; it may be due to paralysis of the sphincter of the urethra, or to the existence of fistulous passages between the bladder and the vagina, produced in consequence of the pressure of the head during parturition, unskilful or improper use of instruments, &c. *Vaginal rectocele, cystocele, and ruptured perinæum*, are also, generally, mechanical effects of undue distension or rupture of certain portions of the vaginal walls or outlet during parturition.

It is a disputed point whether *uterine cancer* is most common in women who have had children, or in those who have had none. Dr. West says,* 'Though ample proof to the contrary has been long since adduced, we still find it asserted sometimes that single women and those who have had no children are most liable to be attacked with cancer. The truth appears to be the direct reverse of this statement. . . .' Scanzoni gives it as his opinion that, in a certain degree, sterility predisposes to the disease. The statistics of these two observers give the following results:—Of 131 married women affected with cancer, 8 were sterile (West). Of 108 married women affected with cancer, 36 were sterile (Scanzoni). All, however, including Scanzoni, agree in considering that, in women who have had *many* children, uterine cancer is more likely to occur. Thus, in Dr. West's 123 cases of cancer, in which the marriage was fruitful, the average number of pregnancies per case amounted to 6·8. In Scanzoni's 72 cases, the average number of pregnancies per case was 7·01. The average number of children per marriage in this country, given by Dr. West, is 4·2—an average certainly much exceeded in the cases of cancer uteri recorded by him, and still more so in the cases of Scanzoni. Mr. Sibley's researches, also the more recent statistics of Dr. Tanner,† all tend in the same direction. It follows, therefore, that uterine cancer is often associated with over-fecundity.

* *Op. cit.* 2nd ed. p. 370.

† *A Clinical Report on Cancer of the Female Sexual Organs.* By T. H. Tanner, M.D. Lond. 1863.

CHAPTER III.

MENSTRUAL DERANGEMENTS; AND EXTERNAL HÆMORRHAGES
FROM THE GENERATIVE ORGANS.

NORMAL PHENOMENA OF MENSTRUATION.—Age at which Menstruation begins and ends; its Periodicity and Duration; the Quantity and Quality of the Fluid discharged.

1. **MINUS CONDITIONS OF THE CATAMENIA; DISCHARGE EITHER ABSENT OR LESS THAN USUAL.**—(A) Cases in which Menstruation is not, and never has been, present—The various Causes of this Condition: Defective Formation or Absence of the Organs concerned; Retardation of Puberty; Absence of Secretion; Retention; Pregnancy—Diagnosis of these one from the other.—(B) Imperfect Establishment of Menstruation.—(C) Menstruation, previously regular, has ceased—Causes of this Condition: Pregnancy, Suppression, Retention, Premature Cessation of Catamenia.
2. **PLUS CONDITIONS OF THE CATAMENIA,** considered in conjunction with UNUSUAL DISCHARGES OF BLOOD FROM THE GENERATIVE ORGANS.—(A) The Unusual Discharge coincident with Menstruation—Is the Discharge really excessive?—Various Causes of the same—Diagnosis of these.—(B) The Unusual Discharge of Blood not coincident with the Menstrual Period; including an Account of the various Causes of Hæmorrhages from the Generative Organs, General and Local—Diagnosis of these Cases one from the other.

WITH the subject of menstruation, a very considerable portion of the pathology of the diseases of women is intimately connected. The decision with reference to the curative or other treatment of very many diseases to which women are liable, is modified, altered, in almost every case greatly affected, by the results of an examination into the condition of this most important function. A very considerable number of the disorders to which the female sex are obnoxious depend upon altered and morbid conditions of the generative organs; in all of which the menstrual phenomena are subject to deviation from the healthy standard. The alterations in question thus present us with a series of symptoms of great value in the determination of the nature of these various maladies. The variations in the quantity, in the periodicity, &c., of the menstrual secretion, usually spoken of as substantive diseases, and too often indiscriminately treated as such, constitute of themselves the great bulk of the cases brought under the notice of practitioners in this branch of the profession. Patients attribute, and rightly too, a great degree of importance

to 'irregularity,' of whatever kind, experience having shown them how intimately are related a sound condition of the general health, and a healthy physiological state of the menstrual function.

It is thus evident that the due discrimination of the varying conditions which commonly pass under the name of 'menstrual disorders' is one of the most important points to which those who are desirous of treating the diseases of women with success can direct their attention. In very many cases, these disorders are simply evidence of general indisposition; or, at all events, they are such as can only be successfully treated by general remedies, and to distinguish these from others in which the derangement is entirely local, and which are only appropriately combated by operative measures, by direct local applications, &c., requires great care and judgment.

A few remarks concerning the

NORMAL PHENOMENA OF MENSTRUATION

will usefully precede a discussion of the various deviations from the healthy standard met with in practice. It is necessary, indeed, to know what the rule is, before considering the deviations from, or exceptions to, that rule.

The process known under the names 'menstruation,' the 'catamenial discharge,' &c., is one for the production of which two organs are essential—the uterus and the ovary. Menstruation is an indication of the fact that the ovaries are in activity—in other words, that ova are being formed, developed, and matured in the ovaries. By 'menstruation' is meant a periodical discharge of a sanguineous fluid from the uterus, this discharge being attended with an engorged or congested state of the uterus, ovaries, and adjacent organs, in most cases by hyperæsthesia of the parts in question, and by disturbances, of various kinds and degrees, of other functions of the body. It is, in a certain sense, analogous to the *œstrus* in the lower animals, the presence of menstruation being an indication that the woman is capable of being impregnated; but the woman differs from these animals in this respect, that she is capable of being impregnated, not at the time during which the discharge itself occurs, only, but also during the intervals between the periodic discharges. Menstruation is regarded by some writers as an accident, so to speak, of ovulation, as a simple consequence of the congestion of the generative organs—a congestion in which the uterus shares—attendant on the matura-

tion of the Graafian follicles in the ovary, the sanguineous fluid escaping from the inner surface of the uterus, as an effect of the inordinate engorgement of this organ. There is no doubt, however, as to the existence of a certain alteration of the mucous membrane of the uterus during menstruation, attended in many instances, it may be in all, with a complete separation or shedding of this membrane, as the researches of Coste and others have shown; but the exact nature of this change is still somewhat undecided. In the case of a woman who, while menstruating, died in St. Mary's Hospital after an operation for hernia, and whose uterus I had an opportunity of examining, the mucous membrane was greatly thickened; and when a section of the uterus was made, its cavity appeared to be lined by a deeply red, soft, and spongy structure, on the surface of which were visible the orifices of the utricular glands. Similar appearances have presented themselves to other observers. The majority of observers believe that menstruation is dependent on ovulation, although there are not wanting very strenuous opponents of this doctrine: ovulation is not always accompanied by menstruation, as is proved by the fact that women have been known to conceive and bear children in whom menstruation has never occurred.

There are many subjects connected with an enquiry into the physiology of ovulation and its relations with menstruation, which cannot be entered into here, which will be found, however, discussed in the elaborate work of Coste, in the admirable article entitled 'Uterus' by Dr. A. Farre in the 'Cyclopædia of Anatomy and Physiology,' and by Dr. Tyler Smith in his 'Manual of Obstetrics.' In Dr. Tilt's work 'On Uterine and Ovarian Inflammation,' a vast number of interesting facts bearing on the subject are collected.

The *age* during which the catamenial discharge occurs is open to certain variations; but, as a rule, it begins between the ages of 14 and 16, and ceases between the ages of 40 and 50. For about thirty years of the woman's life this discharge is periodically observed. With reference to the age at which it commences, we have observations by Robertson,* Whitehead,† Brierre de Boismont,‡ and more recently by Szukits.§ In 358 cases observed by myself, menstruation occurred for the first time

* *Observations and Notes on the Physiology and Diseases of Women, and on Practical Midwifery*, 8vo. 1851.

† *On the Causes and Treatment of Abortion and Sterility*, 8vo. 1847.

‡ *De la Menstruation dans ses Rapports Physiologiques et Pathologiques*, 8vo. Paris: 1842.

§ See an abstract of his observations in Schmidt's *Jahrb.* Bd. xcii. p. 331.

At the age of 10 in 3 cases				At the age of 18 in 23 cases			
"	"	11	" 12 "	"	"	19	" 10 "
"	"	12	" 29 "	"	"	20	" 6 "
"	"	13	" 43 "	"	"	21	" 2 "
"	"	14	" 73 "	"	"	24	" 1 "
"	"	15	" 62 "				
"	"	16	" 61 "				
"	"	17	" 33 "				
				Total . . 358			

The greater number of these cases were hospital out-patients.

The mean age in 4,000 cases referred to by Whitehead was 15 years $6\frac{3}{4}$ months. In 2,169 cases collected by Robertson, Lee, and Murphy, the mean age was 14 years 11 months. Szukits found the mean age to be, in 665 women born in Vienna, 15 years $8\frac{1}{2}$ months; and in 1,610 women born in the country, 16 years $2\frac{1}{2}$ months, which result, as regards the influence of town life in hastening the first appearance of the catamenia, agrees with that arrived at by Brierre de Boismont in Paris. The latter observer states that, amongst women belonging to the upper classes of society, the average age of commencement was as early as 13 years 8 months. Although the age 14-16 is the most common, yet there are numerous exceptions to this rule. In Robertson's 450 cases, ten began to menstruate as early as 11 years old, and nineteen at 12. The youngest of Szukits' cases was, in the town class 11 years, and in the country class 10 years old. In three out of 358 cases noted by myself, menstruation began at the age of 10 years, and although the largest number of my own cases—73 out of 358—menstruated first at the age of 14, a very considerable number menstruated first as late as the age of 18.

The mean age of the commencement of the catamenia appears to be about two years earlier in the warmer than in the more temperate climates. Thus in India the mean age in 597 cases collected by Robertson was 13 years. It was formerly supposed, on the assertions of Montesquieu and Haller, that Hindu women begin to menstruate, as a rule, at 8, 9, and 10 years of age; but the facts collected by Robertson conclusively show the incorrectness of this opinion. It does appear, however, from Robertson's tables, that the 'proportion of Hindus who arrive at puberty at the ages of 12, 13, and 14,' is far greater than is observed in the women living in our own temperate country. This early arrival of the catamenia is attributed by Robertson to the influence of race—to the circumstance that for many generations (upwards of three thousand years) it has been the custom of this people to give their daughters in marriage immediately on the arrival of

puberty. This custom has, in Robertson's opinion, produced and perpetuated a kind of 'family peculiarity.' Whether we consider, with the author in question, that the difference in this respect is dependent on 'race,' or, with Montesquieu and Haller, that 'climate' is its determining cause, the fact remains, that in India menstruation first appears somewhat earlier than in England. The enquiries of Mr. Robertson seem to show that, with respect to other countries, the age at the first appearance of menstruation is almost identical with that in our own country. Statistics in reference to the inhabitants of colder countries than England do not, on the same authority, afford evidence in proof of the popular opinion that menstruation is with them notably retarded.

The *latest age* at which the catamenia may commence is open to great variations; but, as a rule, it is not postponed beyond the age of 18. Brierre de Boismont found that, out of 359 'femmes de la capitale,' twenty began to menstruate at 18 years, six at 19, five at 20, two at 21, four at 22, and two at the age of 23. The latest age given by Robertson is also 23. Szukits gives the age of 22 as the latest at which the first appearance occurred in the Vienna class; but of those from the country one woman began to menstruate as late as 25. The latest age in my own series was 24. In a case quoted by Meissner, the catamenia first appeared at the age of 42.*

The cessation of menstruation occurs in the majority of cases between the ages of 40 and 50. The number of cases in which the cessation takes place before 40 is greater than the number of those in which the final appearance of the catamenia occurs after the age of 50. (Brierre de Boismont.) There appears, however, to be a great diversity in the results obtained by various observers on this point. Thus, in the cases, 181 in number, of the author just quoted, the age at which the final cessation most frequently (18 out of 181) occurred, was 40; while in Robertson's cases it was most frequently observed (in 26 out of 77 cases) at the age of 50; in the majority of the cases observed by Szukits at 46-50. The earliest period at which the cessation may take place is shown by the following recorded facts:—Of Brierre de Boismont's 181 cases, the cessation was noticed in seven before the age of 30, the earliest being at the age of 21. The earliest cessation in Robertson's 77 cases was at the age of 35. Szukits gives two cases at the age of 30.

* Meissner, *Frauenzimmerkrankheiten*, ii. p. 741.

The following table shows the results of my observations in 55 cases :—

Menstruation ceased At age of 30 in 1 case	Menstruation ceased At age of 45 in 6 cases
" " 33 " 1 "	" " 46 " 2 "
" " 34 " 2 "	" " 47 " 4 "
" " 35 " 1 "	" " 48 " 5 "
" " 37 " 1 "	" " 49 " 4 " and 1 still menstru- ating at that age
" " 38 " 3 "	" " 50 " 4 "
" " 39 " 1 "	" " 51 " 3 "
" " 40 " 2 "	" " 53 " 1 " and 1 still menstru- ating at that age
" " 41 " 2 "	
" " 43 " 8 "	
" " 44 " 2 "	Total . 55

Perhaps the most interesting class of facts in connection with this subject has reference to the latest age at which menstruation may occur. There is very little doubt that some of the cases related as cases of late menstruation are not cases of menstruation proper at all; but it must be allowed that occasionally a discharge, sanguineous and periodic, may be present at a very late age. Gardien relates the case of a woman said to have been 'parfaitement réglée' at the age of 75. Up to the age of 55 there are a sufficiently large number of cases; but after that age true menstruation is exceedingly rare. Brierre de Boismont gives five after the age of 55, out of 181, one being as late as 60. Robertson (*op. cit.* p. 185) gives four out of 79, as occurring after 55, two of which were at the age of 60, and one as late as 70. Lastly, Szukits gives one case (his latest) at the age of 60.

Some, apparently well-authenticated, cases of menstruation at very advanced ages, viz. at 91, 80, 87, 59, and 70 years of age, are related in the work of the late Dr. D. D. Davis.*

In reference to the foregoing statements, it is probable that many of the apparent exceptions to general rules quoted were cases in which pathological elements were more or less intermixed.

Menstruation ceases earlier in India; but everywhere the duration in years is much the same. For about thirty years menstruation continues. Robertson is of opinion that early cessation is chiefly noticed in those cases in which the function has been established at an early period. In most of those cases, however, in which the function continues to be exercised up to the age of 53 or 54, the period of commencement has not been unusually

* *Principles and Practice of Obstetric Medicine*, vol. i. p. 239.

late; in such cases, the menstrual life far exceeds the average of thirty years.

Periodicity.—The usually accepted statement is that the time included between the day of the appearance of the discharge and the corresponding subsequent day is twenty-eight days—a lunar month; but the difference presented by individual cases in this respect is so great as to show that any rule generally applicable must have rather a wide range. Many women menstruate regularly every three weeks; and a less number menstruate every calendar month, or a little over. In another class of women there is great irregularity, the period varying from time to time consistently with health. It is only, then, in the majority of instances that menstruation occurs every lunar month. There is often evidence that peculiarities in respect to the menstrual period are transmitted from one generation to another.

Number of Days during which the Discharge continues.—In 562 cases examined by Brierre de Boismont, the discharge continued 8 days in 172 individuals; the number of days next frequently observed was 3; the next 4. The conclusion arrived at by this author was that the menstrual flow continues longer in towns than in the country; and longer in small, nervous, delicate women, than in those who are tall, robust, and of a sanguine temperament; longer also in those who lead a sedentary, easy, voluptuous life than in those who follow active occupations, whose diet is conducive to health, and whose manners are regular.* In women who are beginning to menstruate, the discharge lasts generally a short time for the first few months, its duration increasing subsequently. The time during which the discharge continues is, in general terms, three to seven or eight days; but the observer must be prepared to meet with great variations in this particular.

Quantity.—Late observers (Magendie excepted) consider the typical quantity of sanguineous fluid which is lost at each period to be three to four ounces; or even less than this.† The older estimates considerably exceeded this in amount. The quantity appears to be greatest about the middle of the period in the majority of cases. Sudden cessation for some hours together, followed by copious discharges, whether accompanied by coagula or not, is abnormal; for when there is no impediment the flow continues persistently and uninterruptedly, though it may be more in quantity at one time of the day than another.

* *Op. cit.* p. 142.

† Farre, *loc. cit.* p. 663.

Quality of the Fluid discharged.—The researches of Dr. Whitehead, Donné, and others, have conclusively shown that the discharge observed is really composed of blood; and that when obtained immediately from the uterus, and before it has been subjected to the action of the acid mucus of the vagina, it is coagulable just as is ordinary blood. Ordinarily, as it flows from the vulva, it has acquired an acid reaction, and is no longer coagulable. For the first few hours the discharge is paler, it then becomes of a deeper red, and again appears of a lighter colour as it is about to disappear. The odour of the menstrual secretion is peculiar; formerly extraordinary effects were attributed to it, which it is unnecessary to enumerate here. The varying qualities of the vaginal and cervical secretions have probably more influence in altering the qualities of the menstrual fluid than any varieties of the fluid itself as it exudes from the uterus.

There are two classes of cases, under one of which all disorders of menstruation likely to present themselves for examination can be included:—1. Those in which there is a *minus* state of the discharge; and 2. Those in which, the quantity being excessive, or above what usually obtains, it may be considered as being in a *plus* state.

1. MINUS CONDITIONS OF THE CATAMENIA: DISCHARGE EITHER ABSENT OR LESS THAN USUAL.

The series of cases which may be first examined, are those in which

(A) MENSTRUATION IS NOT, AND NEVER HAS BEEN, PRESENT.

We are here concerned, not with those cases in which there has been a slight sanguineous discharge from the generative organs, but with those in which there has been none at all. The first point which it is necessary to determine, in endeavouring to ascertain the cause of the non-appearance of the menstrual secretion, is: Are the organs essential to the performance of this function actually present? If the *ovaries be absent*, no menstrual discharge can take place; and the like holds good if, the ovaries being present, the *uterus be absent*. Cases coming under either of these categories are rare. In cases of absence of the ovaries the external signs of puberty are wanting; the breasts, under such circumstances, would be small and undeveloped, and absence of sexual desire and of other feminine characteristics might be

expected to be observed. Women who have had the ovaries artificially removed when young are said to have acquired a masculine voice, and even a profusion of hairs on the chin and face, resembling the beard of the man. *Absence of the uterus*, or what practically amounts to the same thing—extremely rudimentary formation of this organ—is an occurrence of less rarity than absence of the ovaries. No absolutely distinctive signs of the absence of the uterus can be given: the diagnosis presents great difficulty. In a case which came under my own observation, the catamenial discharge was quite absent; the sexual inclination was very slight, but still present; the breasts rather small. The ovaries were probably present; but, on physical examination, no uterus could be detected.*

In cases where there is reason to suspect defective development of the generative organs of any kind, an examination would be necessary. The proper method of performing such an examination, and the conclusion to be drawn therefrom, will be hereafter described.

Absence of any one of the parts of the generative apparatus just referred to—of the ovaries, uterus, or vagina—is rare; and absence of the catamenia from either of the conditions in question is also, therefore, an altogether exceptional occurrence; but it is not so uncommon to find that the uterus and ovaries, although actually present, retain their infantile conditions; that degree of development necessary to the establishment of the catamenial function failing to take place. There may be no defective condition of the bodily health to be detected, and yet from month to month there is no appearance of the discharge. The ‘proper’ age is gone by, and the friends of the patient become seriously uneasy. There are a few cases of this kind in which the vagina is healthy, the uterus present; the only thing wanting, in fact, is the discharge, and it has appeared that the cause, so far as capable of being ascertained, has been a slightly defective condition of the development of the uterus; this organ being found normally constituted, but retaining to too great a degree its childlike condition. Dr. Simpson has called particular attention to the connection of this condition with ‘amenorrhœa,’ in his recently published lectures.† The signs of ovarian activity are generally absent, or present only in a very slight degree. These cases give no occasion for anxiety as regards

* The subject of the congenital defects, malformations, &c., of the uterus, has been elaborately treated by Kussmaul in his work *Von dem Mangel, der Verkümmernng und Verdopplung der Gebärmutter*, 8vo. Würzburg: 1859. In this work there will be found a very large number of illustrative cases.

† *Medical Times and Gazette*, 1861.

the immediate effect on the patient; but the prognosis may be serious as regards her matrimonial prospects. It is, in a word, uncertain what course will be taken with the generative organs—whether they will remain in this functionally idle condition, or not; and, if not, when and how the appearance of the secretion will take place. The diagnosis, then, is a matter of extreme importance: much may depend upon it; and the nature of such cases cannot be too carefully scrutinised.

For the purpose of ascertaining, firstly, whether the vagina and uterus be actually present, and, secondly, if present, whether they present or not that imperfect degree of development alluded to, it will be necessary to undertake a physical examination of the condition of the external generative organs, and of the vagina and uterus.

Retardation of Puberty.—In some cases, that is to say, in young women who have not yet passed the latest age at which the catamenial discharge is first noticed, there is no appearance of the catamenia, because there is retardation of puberty; and this may be unassociated with any defective condition of the bodily health.

In considering this part of the subject, we have to decide* what are the circumstances which, in a given case, will enable us to determine that this, and this only, is the cause of the non-appearance of the menses. The general signs of the arrival of puberty in the woman are thus eloquently enumerated by Brierre de Boismont:—‘L’époque de la puberté est enfin arrivée. Une révolution immense s’opère dans l’organisation de la jeune fille. A ses formes grêles et allongées ont succédé des contours pleins et gracieux. Sa démarche, incertaine et languissante, devient ferme et animée. Le doux éclat de ses yeux révèle le feu dont elle est pénétrée. Des changements non moins remarquables ont lieu dans l’économie. . . . La poitrine, étroite et resserrée, s’agrandit et s’évase. Les poumons respirent plus à l’aise; le cœur, plus développé, lance avec force le sang dans les innombrables vaisseaux du système circulatoire. Le tissu cellulaire apparaît à son tour pour former des courbes admirables qui constituent la beauté de la femme. De tous les organes qui ressentent l’influence de la puberté, l’utérus et ses annexes sont ceux où elle est le plus prononcée. Réduits à un petit volume, la matrice, les ovaires, les trompes, et les seins prennent un accroissement considérable. Les os, les muscles participent à ce développement général. Le moral lui-même offre des différences non moins tranchées. La jeune fille, jusqu’alors véritablement enfant dans ses goûts, ses inclinations, ses penchants, éprouve une complète métamorphose; inquiète et rêveuse, elle ne

sait à quoi attribuer les sentiments nouveaux qui l'agitent; tous les sens sont en éveil; une douce chaleur la pénètre; un prurit inaccoutumé se fixe aux organes de la génération; le plus important phénomène de la puberté, son complément indispensable, celui qui transforme la jeune fille en femme, la première éruption des règles, se manifeste.*

These are the general, and for the most part outward, signs of the arrival of puberty. There is another series of symptoms, however, to the presence or absence of which considerable importance must be attached in the determination of the present question—Is the absence of menstruation caused by retardation of puberty? The series of symptoms referred to are those known under the term *molimina menstruationis*.

The chief symptoms of the menstrual molimen—the attempt at menstruation, the evidence of ovarian activity—are as follows:—A sensation of weight and fulness in the pelvis and its neighbourhood, together with a 'bearing down' or dragging sensation; pains radiating from the loins downwards towards the perinæum, and occasionally extending down the thighs; tenderness over the hypogastric and inguinal regions; a feeling of heat in these regions so intense as to be described as 'burning' by some patients. Irritability of the bladder, frequency of micturition, and inability to evacuate the bladder, are more rarely observed. The digestive system sympathising, there are diarrhoea, or constipation, sickness, inappetency. Fretfulness, or change of temper and disposition, may also be noticed; in short, many of those symptoms usually classed under the denomination 'hysterical' may be present. The local symptoms are the most constant. When symptoms of the above character are observed at intervals of three or four weeks, persisting in each periodic recurrence for two, three, or four days together, in a young woman who presents outward signs of having arrived at puberty, they are evidence of the existence of ovarian action, and constitute the menstrual molimen. The characteristic point about these symptoms—that which, indeed, constitutes their diagnostic value—is their periodicity.

This seems to be the proper place to state, that in some cases where menstruation is absent there is witnessed a periodically occurring hæmorrhage or exudation of blood from some other mucous surface, as from the lungs, stomach, surface of an ulcer situated on some part of the cutaneous surface, &c. In such cases there is said to be *vicarious menstruation*.

* *Op. cit.* p. 1.

With reference to the arrival of puberty, we have first to look for the *outward* evidence of the same in the form, development, &c., of the body generally, and of the external sexual organs in particular; we have to seek for *internal* evidence of the functional activity of the reproductive organs, in the symptoms or signs described under the term menstrual molimen.

If both internal and external evidence be wanting, we may conclude that the case is one, purely and entirely, of retarded puberty; that is to say, if we have previously satisfied ourselves that the sexual organs are present, and are normally developed. It must not be forgotten that the presence of the menstrual molimen does not indicate anything more than that the ovaries are present. The uterus may be so defectively formed, that menstruation is not possible, although the ovaries are, so far as circumstances admit, exercising their normal function. Other questions connected with this subject will be discussed further on, in describing the results of examination of the vagina, &c.

We may now return to the point previously under discussion. If the patient exhibit other characteristic evidences of having arrived at puberty, and no menstrual discharge have been observed, the case must fall under one of the three following heads:—

Either, *There is no secretion of the menstrual fluid*;

Or, *The menstrual fluid is secreted, but not evacuated—retention*;

Or, *The woman is pregnant*.

These several conditions must, in the first place, be separated one from the other; we may afterwards proceed to consider the circumstances which give rise to the two conditions first in the list.

It is possible for a woman to become pregnant in whom no catamenial discharge has ever been observed, as several well-authenticated cases prove.* In such cases, either conception takes place at the exact time when the function of menstruation is about to be established, and the pregnancy is then the cause of the absence of the menstrual flow; or, an instance is before us of a peculiar idiosyncrasy, now and then, but rarely observed, owing to which no menstrual secretion ever occurs; although this circumstance proves no bar to the woman's fertility. It is a mistake, then, to suppose, that it is impossible for the woman to be pregnant because the menses have never made their appearance. It is in young women who have married early and before the arrival

* Montgomery, *op. cit.* p. 77.

of the catamenia, that instances of this kind are likely to be met with. It is in these very instances, moreover, that the real state of the case is most likely to be overlooked. It will be remembered, in investigating a possible case of this exceptional character, that if pregnancy be present, there will be a complete absence of the periodic menstrual molimina, a circumstance which will assist in distinguishing the case from one of retention of the menses. In both pregnancy and menstrual retention, the abdomen may be enlarged, and the uterus is necessarily increased in size.

But the woman may have been married for some years, and no discharge ever observed. Puberty, with all its external manifestations, this one excepted, is present. Here also pregnancy is possible, as has just been stated. Some women bear children, but never menstruate; of which fact we are assured on the authority of several writers and observers of repute. In these cases, however, the signs of ovarian activity were probably not wanting upon the occurrence of conception, though this circumstance is not alluded to in many of the instances of pregnancy without previous menstruation which have been recorded. The diagnosis of pregnancy will be hereafter fully considered; it is only necessary, at present, to warn the observer of a possible contingency.

Retention of the Catamenia is occasionally found to be the cause of the non-appearance of menstruation at the expected time. The ovaries and the uterus discharge their functions regularly, but there is no outlet for the secreted fluid. The uterus becomes enlarged, an abdominal tumour is felt, and the woman is often, under these circumstances, supposed to be pregnant. The ordinary history of such a case is as follows:—Puberty arrives, and with it the indications of activity on the part of the generative organs, and recurrences of the menstrual molimina are observed from month to month. The pain and discomfort at these periods are at first inconsiderable, but after a time these symptoms increase in intensity; a sense of fulness and weight in the pelvis remains also in the intervals between the menstrual attempts. The symptoms becoming gradually more severe in character, the patient is never thoroughly easy and comfortable. The bowels are constipated; there are frequency of micturition, permanent and severe pains in the loins, all periodically increased in severity. The health fails, and the patient passes from a condition of perhaps robust health to the opposite extreme; the appetite is lost, and nutrition greatly interfered with. And now the uterus, increasing in size from the presence of the retained catamenial

secretion, forms a tumour readily detected in the hypogastric region. The patient is often considered to be pregnant, and the supposition that pregnancy exists is apparently perhaps confirmed by the presence of those gastric symptoms usually associated with pregnancy, such as vomiting and nausea. The breasts may also sympathise, and become painful and tumefied. The intensity of the symptoms observed varies much in different cases; and the degree to which the uterus becomes distended is open likewise to great variation: it would appear that in some instances a portion of the menstrual secretion is from time to time absorbed, and a large accumulation thus prevented. When the distension of the uterus reaches a certain point, pains in the back resembling labour pains, and doubtless due to contractions of the uterus, are observed. The termination of these cases when left alone is various. The uterus may relieve itself by expelling the accumulated fluid into the peritoneum; or the fluid may be evacuated by the bladder (in one case cited by Meissner, a woman aged 42 had for several years regularly menstruated through the bladder), or by the rectum. The *accidents* liable to occur in consequence of this retention form a most interesting, and as yet imperfectly explored, field of study: the elaborate work of Bernutz and Goupil* contains what is at present known on this subject.

The diagnosis is arrived at by a consideration of the symptoms and by physical examination. The characteristic points, so far as the symptoms go, are, the presence of puberty, generally complete absence of menstrual discharge, presence of periodic attacks gradually increasing in severity, of the kind already described, a fulness in the pelvic region, which goes on increasing from month to month, and which gives rise to difficulties in micturition and defæcation; all these symptoms, be it observed, occurring soon (within the first year or so) after puberty has arrived. If the woman be married, it will, in the large majority of cases, but not in all, be found that sexual intercourse is performed with difficulty, or that it cannot be performed at all. The physical signs, to be hereafter more fully investigated, are, presence of a tumour in the hypogastric region, discoverable by examination of the abdomen, and the want of an outlet for the menstrual fluid, discoverable by an examination of the vagina.

From pregnancy without previous menstrual discharge, this condition is distinguished, firstly, by the symptoms, the periodic

molimina being absent in pregnancy; and, secondly, by examination *per vaginam*, which, in the case of retention, would discover to us the existence of atresia of this canal, imperforate hymen, or closure of the canal of the cervix uteri. The rare case of absence of the uterus, the ovaries being well developed and in activity, is to be distinguished from retention by the fact that the menstrual molimina, though present, are imperfectly marked and wanting in intensity; in addition to which, a simultaneous examination through the bladder and rectum would fail to detect the presence of the uterus in its normal position. Practically this latter question is hardly likely to arise.

The only other condition to be eliminated from the consideration is non-secretion of the catamenial fluid. Here the menstrual molimen (possibly) and puberty are present, but no discharge appears. If there be an absence of all signs of accumulation in the uterus, of symptoms of fulness and pressure, and of the physical signs before referred to as observable when the case is one of retention, these are indications that the case is not one of the latter description. The examination *per vaginam* detects no atresia of this canal, and sexual intercourse is not impeded. It is not sufficient to determine that the vaginal canal is free; for although the retention is mostly due to obstruction in this situation, the obstruction may be situated in the cervical canal of the uterus itself. The latter condition existing in connection with retention is, however, very rare. The diagnosis of pregnancy from non-secretion of the catamenia rests on the absence of the molimina in the former, and on the absence of a pelvic tumour in the latter condition. When it has been ascertained definitely that retention is present, the next object in view should be to determine the cause of the retention. This question will be more conveniently considered further on. (See 'Examination of the Vagina.')

Having thus disposed of retention and pregnancy as possible causes of absence of the catamenial discharge, and having determined that neither of these conditions is present, we adopt the alternative that the menstrual discharge does not appear because it is not secreted.

We may now consider the following question:—*What are the causes of the non-secretion of the catamenial fluid?*

It very commonly happens that the non-secretion of the menstrual fluid in young women who have arrived at the period of puberty is connected with a defective condition of the bodily

health. This class of cases is one of extreme importance: the cases present themselves before us with very great frequency in practice, and the imperfect and erroneous ideas which the public entertain respecting them too frequently lead to the adoption of inappropriate and even mischievous methods of treatment.

Of the *general conditions* now more particularly alluded to, and which may prevent the occurrence of menstruation, *Chlorosis* is perhaps the most important. Opinions are somewhat conflicting as to the precise relation in which the two things, the chlorosis and the amenorrhœa, stand one to the other. The signs of what is termed the 'chlorotic' condition are the following:—At the period when the external signs of puberty begin to manifest themselves, the patient usually experiences, at monthly intervals, some of the 'molimina menstruationis' before referred to, but, coincidentally, she falls into a general state of ill-health. The strength fails, there is extreme lassitude, often great drowsiness and indisposition to exertion of all kinds; there is cephalalgia, often very intense in character; the whole digestive system is deranged; inappetency, or singularly depraved states of the appetite, nausea, obstinate constipation—these are almost constant symptoms. The skin assumes a remarkable and highly characteristic appearance, being, as the name *chlorosis* denotes, of a greenish-yellow colour, more or less intense in degree in different cases; a ghostly kind of pallidity is often seen. The lower extremities may become œdematous, and the disturbance of the circulating apparatus is evinced both by this and by the frequent palpitations, noises in the ears, and alterations of the sounds of the heart, and of the great vessels, detected by auscultation. The external signs of chlorosis are usually so well-marked that the observer has little difficulty in recognising its presence.

The opinion of William Hunter, of Marshall Hall, of Rigby, and many other eminent practitioners—an opinion with which my own experience and observations induce me entirely to concur—is that the disease present in such cases is the chlorosis and not the amenorrhœa; in other words, that the amenorrhœa is an accident or result of the chlorosis. Although chlorosis frequently exists without antecedent menstrual discharge of any kind, this is not by any means an universal fact; for chlorosis may be and is often observed in individuals who have at a former period menstruated, but in whom the menstrual phenomena have ceased to evince themselves.

It does not appear that, in any considerable number of cases, the *tuberculous diathesis* exerts a marked influence in preventing the establishment of menstruation, although it may exercise an appreciable disturbing effect on that function at a later period, the reason for which appears to be that menstruation generally commences at an earlier age than that at which the manifestations of the tubercular diathesis most commonly occur. Sometimes, however, the retardation is unmistakably due to the presence of a phthisical tendency, which is itself indeed an evidence of an extremely low state of the nutritive powers; and when such is the case, the greatest possible watchfulness and care are necessary.

'The occurrence of *serious illness* of almost any kind a few months, or even a few years, before the arrival of the period of puberty,' will often, as Dr. West remarks,* postpone the appearance of the menses. This author mentions a case in point of a young woman who, at the age of fifteen, had a severe attack of scarlet fever, and at the age of twenty had not menstruated. Dr. West also refers to *cretinism* as a cause of the non-appearance of the menses at the usual age, citing the report made to the Sardinian Government to this effect. Such cases would seem to come under the present category.

The general conclusion to which these facts lead is, that, whenever the general health is in any way affected, the absence of menstruation is at once accounted for. The popular belief in respect to such cases is that the patient suffers because she does not menstruate. This is very rarely true; menstruation is absent because of the defective condition of the general health: the fact that we do not rarely find menstruation proceeding with perfect regularity in cases where the patient is evidently extremely ill otherwise, does not militate against the correctness of this theory.

If nothing materially wrong be detected in the condition of the general health of the patient, while the signs of puberty previously spoken of are present, if no menstrual fluid be secreted or present in the uterus, and if pregnancy have been eliminated from the question, the conclusion to be formed—a conclusion liable to modification according to the age of the patient—is, either that the development or formation of the uterus is defective, or that owing to idiosyncrasy the patient does not *menstruate*.

* *Lectures on Diseases of Women*, p. 34.

(B) IMPERFECT ESTABLISHMENT OF MENSTRUATION.

There is a class of cases also very frequently presenting themselves in practice in which a discharge has occurred on one or more occasions, but very slight in amount, and only enough to show that menstruation is possible.

In most of the cases of this kind the discharge does not reappear, because it is not secreted; but we must not forget the possibility of the occurrence of cases in which *retention* is present, the patient having had a slight discharge of a catamenial nature. The circumstances which give rise to imperfection in the establishment of the function of menstruation in the greater number of cases coming under the present category, are identical with those which have been alluded to—defective general constitutional conditions—as capable of preventing it altogether. The cases coming under this head are, however, actually far more numerous than those comprehended under the former one.

It is in connection with these cases of imperfect establishment of menstruation that a light-coloured discharge appears—replacing in a manner the catamenial flow—at intervals. This spurious form of menstruation may occur for two or three or more periods before the normal flow occurs, even in cases when there is nothing evidently abnormal present. It is in such cases also that the so-called vicarious menstruation may occur; and the diagnosis of such cases is especially interesting, not less from the frequency with which they occur in practice than from their actual importance.

It is to be remarked also that these cases of imperfect establishment of menstruation are very often set down as cases of suppression, this erroneous mode of interpreting the symptoms of the case leading to the adoption of equally erroneous and pernicious modes of treatment. Emmenagogues are given with the view of invoking a 'return,' and the defect in the general health of the patient, the real cause of the evil, is overlooked.

The cases next to be considered are those in which

(C) THE MENSTRUAL FUNCTION HAS BEEN REGULARLY PERFORMED AT SOME PREVIOUS TIME, BUT HAS SUBSEQUENTLY ALTOGETHER CEASED.

The 'courses are stopped.' The point to be determined is the cause of the cessation in question. The conditions capable of giving rise to cessation of menstruation of the kind now under consideration are the following:—

PREGNANCY.—Suppression of the menses, as a sign of pregnancy, is one to which considerable importance is usually but erroneously attributed. 'We are,' says Dr. Montgomery, 'quite justified in adopting, as a general rule, that in healthy women, whose menstruation has been established and continued regular, and who are not nursing, conception is followed by a suppression of the menstrual discharge at the next return of its period; but then this suppression may not so occur; and, on the other hand, it may happen from a variety of other causes altogether unconnected with pregnancy.'

In the investigation of a case of suppression of the menses, in order to determine the possible existence of pregnancy, the statements of the patient must be received with caution, and especially if there be reason for believing that any motive for concealment of the real facts of the case exists. 'Nothing,' says Casper,* 'is easier for a person who is desirous of simulating pregnancy than to declare that menstruation has ceased for such and such a time; and it is only by a favourable accident that an examination is made at the catamenial period, and the imposition thus discovered.' In like manner, menstruation is now and then simulated, in order to avert the suspicion of pregnancy, and artificial staining of the linen with blood has even been had recourse to, in order to carry out the deception. In one case related by Casper, pigeon's blood was used for the purpose, but on examination of the blood by means of the microscope it was found that the corpuscles presented an oval shape, and the imposition was thus at once made manifest.

These sources of error having been examined and dismissed, we have next to determine the value of menstrual suppression as a sign of pregnancy.

Its actual value amounts to very little. Suppression of the catamenia for three or four months not unfrequently occurs from causes altogether independent of pregnancy. In young women only just arrived at puberty, the interval is now and then as long as this before the function is thoroughly and completely established: further, it is not very uncommon for the menses to be suppressed just after marriage, for a month or two, without pregnancy taking place.

If pregnancy have existed for more than four months, other data for diagnosis, having a much more positive value as signs of preg-

* *Practisches Handb. der gerichtl. Medicin. Biolog. Th.* Berlin, 1858, p. 201.

nancy than the mere absence of the catamenia, enlargement of the uterus, mammary changes, &c., are available, and should be sought for by examination and otherwise. In women who have an object in concealing the fact of the existence of pregnancy, the absence of the catamenia for two or three periods is, however, to be regarded as a suspicious circumstance, and should be sufficient to put the practitioner on his guard, although it need hardly be observed that this suspicion should be confined to himself at this stage of the enquiry. If it be cruel and improper rashly to give utterance to suspicions damaging to the fair character of the patient, it is equally damaging to the reputation of the practitioner to allow the existence of pregnancy to escape his notice. Both extremes are to be reprobated. The presence of 'morning sickness,' associated with catamenial suppression, would make the suspicion of pregnancy a little stronger; but some pregnant women are never 'sick.' As a rule, the suspicion of the existence of pregnancy may be dismissed, if, after four or five months, the physical signs of pregnancy, such as enlargement of the uterus, &c., do not show themselves; but even this rule is one to which there are exceptions. It now and then happens that the catamenia are suppressed for two or three months, and the woman *then* becomes pregnant. In such a case, the physical signs just alluded to would not, of course, present themselves at the end of the four or five months from the date of the suppression, and an erroneous inference might thus be drawn. In some rare recorded instances, women have been known to present the peculiarity of never conceiving until after three or four months' previous suppression. Again, pregnancy may occur at a somewhat advanced period of life, and when the menstrual phenomena have for some years altogether ceased. The absence of menstruation in a woman over forty years of age, for a period varying from two to nine years, *may* be followed by pregnancy at the end of that time.*

More frequently, perhaps, the fact of the menses having ceased is made the basis of the conclusion that pregnancy exists by women who desire to be pregnant, and who, somewhat advanced in life and arrived at 'a certain age,' interpret facts according to their own wishes. Here embarrassment is not seldom produced; women at this age are ready with all those presumed corroborative facts with which their own experience or the experience of their friends has made them familiar; and it is only by a rigid adherence to the rule to take nothing which is simply asserted for granted, that

* See Montgomery, *op. cit.*, for several interesting cases of this kind, pp. 88 *et seq.*

the practitioner will prevent himself from being led to form equally sanguine expectations with the patient herself. At the period of sexual involution, that is to say, at the time when the functions of reproduction are about to come to an end, the mere cessation of the menses is therefore of less value as a sign of pregnancy than at any other period of life. It is the fact that, at this period of life, a suppression for two or three months, the discharge then returning, often rather profusely, is not at all unusual.

The absence of the catamenia, then, must never be considered as a proof of pregnancy; but in many cases it is of infinite service in directing attention to the view of its possibility. Examination of the abdomen, the vagina, and the breasts, gives more decisive information; and on the data thus afforded only can anything like a positive opinion be given.

Presence of Menstruation during Pregnancy.—In connection with the present question—the value of suppression of the menses as a sign of pregnancy—it is necessary to mention that, in a certain number of cases, even when the patient is pregnant, a discharge more or less resembling the menstrual discharge may occur from month to month. Elsässer* has collected nearly fifty cases, in which a discharge of this kind was noticed during pregnancy. Thus, in eight cases a discharge occurred once during pregnancy, in ten cases twice, in one twice or three times, in eleven cases three times, in four cases four times, in six cases five times, in five cases eight times, and in two cases nine times during pregnancy. And cases are related—one I have myself placed on record†—in which patients habitually menstruate only when pregnant. It is probable that the discharge observed in these exceptional cases is not properly menstrual, but it sufficiently resembles the ordinary menstrual discharge to be so regarded by the patient.

There are many circumstances which may give rise to a discharge from the uterus during pregnancy, such as cancer, inflammatory or congested conditions of the os, &c. An important class of cases, however, are those in which there is an occasional sanguineous discharge from the uterus, which may or may not simulate menstruation, in women the subjects of *extra-uterine* pregnancy. A rather common symptom in cases of extra-uterine

* Quoted from Henke's *Zeitsch.* Bd. 73, p. 402, by Casper, *opus cit.* p. 202.

† *Lancet*, vol. ii. 1868, p. 91.

pregnancy is a sanguineous discharge occasionally occurring during the two or three months immediately subsequent to the date of the supposed impregnation. Thus a woman six weeks after the date in question has a hæmorrhage. This may be due to abortion, it may be simply undue retardation of menstruation, it may be due to extra-uterine pregnancy. The points to which attention should be directed, if extra-uterine pregnancy be suspected, are the following :—presence of unusual pain at a particular situation in the pelvis ; detection, by digital examination of the vagina and by examination of abdomen, of a tumefaction corresponding with the seat of the pain—enlargement of the uterus. If the patient continue to present signs of pregnancy, while hæmorrhage recurs occasionally, this conjunction of signs is to a certain extent confirmatory of the suspicion. And supposing the patient to be suddenly seized, at the end of two, or three, or four months, with symptoms of internal hæmorrhage (see ‘Pain referable to Generative Organs’), a history such as that indicated, together with the symptoms of internal hæmorrhage, point to the conclusion that the case is one of extra-uterine pregnancy and rupture of the cyst, or of some vessel in its neighbourhood. In a remarkable case of extra-uterine (tubal) gestation, related by Mr. Cheesman,* the patient went beyond the full term, never even suspecting her pregnant condition, and deceived by the appearance of what she considered to be a menstrual discharge. There was a discharge from the vagina every five or six weeks, chiefly in clots. The case is the more remarkable that the patient had previously had four children.

Mole Pregnancy.—There is a form of pregnancy which is out of ordinary rules, and is rarely met with ; viz. when the ovum becomes diseased and degenerated at an early period of pregnancy, and a ‘mole’ results. In a case of this kind, either the ovum is rejected soon after, when the nature of the case becomes at once apparent ; or it is retained for some months. Thus a woman may present herself with an abdomen but slightly enlarged, the uterus but little increased in size, and who has had suppression of the menses for from three to seven or eight months, or even considerably more than this, in whom the cause of the suppression is, first pregnancy, and secondly, the presence in the uterus of the degenerated result of the same. If the ‘mole’ grow to a large size, as is often the case with the

* *Lancet* Sept. 14, 1861.

hydatidiform variety, the abdomen and uterus are proportionately enlarged; and the attention is so directly attracted by this, that it cannot be easily overlooked; but in a case where the enlargement is neither so considerable nor so apparent, difficulty may occur. Such cases are rare; and, as a rule, it may be taken for granted that, when the catamenia have been absent for several months, and no enlargement of the abdomen or of the uterus occurs, the case is not one of pregnancy.

Lastly, I would remark that cases in which menstruation, or, at all events, a discharge resembling it, is present for two or more periods, *coincidentally with pregnancy*, and the pregnancy ending naturally, are not quite so rare as is usually stated.

SUPPRESSION.—The diagnosis between suppression of the catamenia of a pathological nature, and the kind of suppression just alluded to, in which there is a physiological reason for it, is occasionally difficult when the catamenial discharge has been absent only for two or three periods; for the pathological suppression is sometimes accompanied with some of the general symptoms of pregnancy, as morning sickness, swelling of the breasts, &c., when pregnancy is certainly not present. This form of suppression very closely simulating pregnancy is noticed by Denman and Montgomery as frequently occurring soon after marriage; and Montgomery characterises such cases as always liable to great doubt, and extremely embarrassing to the practitioner. In an instance which came under my own observation, a like obscurity surrounded the case, but the patient had been married for several years. Under such circumstances the decision must be postponed, and a guarded opinion given.

Another case which is often a source of embarrassment is presented to our notice in young women in whom the catamenial function has only recently been set up; and here we may be in doubt whether the absence be due to suppression, to pregnancy, or to other causes which have been already considered. The absence of a known cause for suppression, the fact that the patient continues in good health, and the absence of signs of pregnancy, would lead to the inference that the case was one of retarded puberty (the age of the patient admitting of this hypothesis), rather than one of suppression in the sense of the word in which it is now used.

From retention of the menses, and from pregnancy, suppression would equally be distinguished by the absence of abdominal enlargement and tumour. In cases of suppression, there is frequently

some evidence of ovarian activity in periodically recurring pains—the ‘*molimina menstruationis*.’

RETENTION may be present in cases where menstruation has been previously regularly performed. This form of retention, there is reason to believe, is not by any means common. It is probable, however, as will be shown in another place, that, in a less degree, retention is more frequently present, as in cases of dysmenorrhœa, where there is partial retention of the menstrual fluid, but in which, however, the retention does not produce cessation of menstrual discharge of the kind now under consideration. Retention will be easily distinguished from pregnancy by due attention to the facts of the case. The symptoms of *complete* retention in a woman who has previously menstruated regularly do not differ materially from those already described as present in women who from the first suffer from retention. The diagnosis of retention from pregnancy, difficult at first, becomes easy afterwards.

It is extremely important to separate the conditions just alluded to—pregnancy, suppression, and retention of the catamenia—one from the other, a separation which will be easily effected by attention to the various diagnostic points laid down: endless difficulties present themselves in doubtful cases until the diagnosis has been advanced to this stage. Having made out that it is not a case of pregnancy or retention, the only alternative is *suppression*. It will be proper, in the next place, to pursue the diagnosis of cases of ‘suppression’ still further.

Causes of ‘Suppression.’

The word ‘suppression’ is here used in a sense somewhat more extended than usual, it being, for various reasons, convenient to include under this general term not merely that acute suppression of the catamenia to which the term ‘suppression’ is more usually restricted, but the more chronic and passive suppression commonly but vaguely designated *amenorrhœa*.

a. Sudden Form.—We may first consider the more obvious and clear case of suppression—that in which, the menstrual period having arrived, the discharge has continued for some hours, and has then suddenly ceased, there being an apparent connection between the cessation in question, and some external or internal disturbing influence known to have been in operation at that particular juncture. Thus the menstrual flow may be suddenly suppressed by the feet getting wet, or by a chill received in any other

way, by fright, or by the reception of distressing or exciting news. These are the most common causes of the kind of suppression here alluded to. Sexual intercourse has been known to produce the same result. The first symptom of the presence of one of the exanthematous diseases may be the sudden stoppage of the catamenial discharge. The facts of the case would point to the diagnosis of the cause; and the difference would be obvious between a case of sudden cessation of the menses in a woman in whom the function had been previously regular, and one in which the discharge, having been for several periods less and less, had finally but gradually ceased. When the discharge thus suddenly ceases, conjointly with the application of some disturbing cause, this fact itself would assist us in the formation of the diagnosis; but we are not without corroborative evidence to apply the popular axiom, *post hoc; ergo, propter hoc*, to the case before us.

Another variety of this form of suppression is that in which there is no cessation of the discharge of the marked character just described; the discharge continues the regular number of days, but fails to recur at the expected time. This form of suppression, as also that which may be called 'suspension' of the discharge, may occur from a variety of causes; and it may be a matter of great difficulty to trace it to its real source. The catamenial function is frequently suspended, according to Sir Ranald Martin, in ladies on the voyage from India by the Cape. Dr. Tyler Smith states that these effects of a marine atmosphere extend in some habits to a residence by the sea-side. He mentions an instance in point, in which a lady who went to reside at one of the islands on the western coast of Scotland, together with her sister and their two maids, all became amenorrhœal.* Montgomery notices the effect of mental depression in producing this suspension in the case of young girls confined in prison. I have had occasion more than once to observe that women are liable to have the menstrual discharge suspended for one or two periods after first going to reside in a house the staircases of which are of stone and uncarpeted, their previous residence having had a wooden staircase only.

Sometimes, capriciously, as it appears, and unexplainably, the menstrual function is suspended or ceases for a time. In such cases, we must often be satisfied with a negative diagnosis only, the most thorough examination of the facts of the case affording no data for its further determination. It may be that, in the

* *On Leucorrhœa*, p. 182.

case before us, a natural cessation of the menstrual function has occurred; but it generally happens that the natural cessation does not take place suddenly and abruptly. It must be recollected that the cases of suppression or suspension which have thus far been considered are those in which the discharge, having been regular both in amount and periodicity, has *suddenly* and altogether ceased. Those cases in which suppression has *gradually* supervened belong to a category altogether distinct from this.

β. Gradual Suppression.—Under this head may be considered those cases in which the discharge, having diminished in amount for two, three, or more periods, or the interval having become longer and longer, the discharge has finally ceased.

Pregnancy is not entirely out of the question; for now and then conception does not occasion suppression of the menses for the first few months of pregnancy. The possibility of the existence of retention of the menses also must not be forgotten.

Passing over these conditions, the discrimination of which is comparatively easy, we have left a very large class of cases in which the menstrual secretion has been arrested in the gradual manner above described; and respecting these there is considerable difficulty in arriving at clear and definite views of the nature of the case. This difficulty in part arises from the unsettled state of the pathology of the subject. When the menstrual secretion is arrested, and the general health becomes affected, which of the two is cause, and which is effect? Is the failure of the general health the cause of the menstrual suppression? or is the menstrual suppression the cause of the failing health? I have already observed that the tendency at the present day, and amongst the best authorities, is to consider that the general indisposition so often coincident with amenorrhœa, both in these cases and in those previously spoken of, is the cause, and not the effect, of the latter.

The causes of gradually supervening suppression of the menses may be conveniently classed under three heads—constitutional, organic, and physiological.

Constitutional.—Any circumstance, or chain of circumstances, calculated to interfere with the nutrition of the body generally and the due performance of the various processes the sum of constitutes life, may give rise to suppression or cessation of menstrual secretion. It very frequently happens that, at a time when the vital processes are in a state of great activity, when the girl is changing into the woman, and it is more than ever necessary that the body should be duly exercised, well nou-

rished, exposed to the fresh air, and recruited by sufficient rest—these conditions so necessary to due development and healthy growth are wanting. Young women belonging to the lower and middle classes of society, and who are engaged for many hours daily in sedentary occupations of various kinds, needlewomen especially, more particularly suffer in this way. The health gradually fails, and after a time menstruation ceases. Then, and not till then, in the majority of cases, advice is sought. Suppression not seldom takes place in a more acute manner in young women so engaged; a slight cause, and one which in a robust individual would be inadequate, being now sufficient to determine it. There can be no doubt that, in a very large proportion of cases of suppression which present themselves in young persons, the cause is purely constitutional, the failure of the general health having preceded the amenorrhœa. In cases of this description, all simply local treatment will necessarily be vain and inefficacious. An instance this of the importance of a correct diagnosis.

To give an account of the various constitutional conditions, derangements, or diseases, which may lead to or have an effect in the production of gradual suppression of the menses, would be an almost endless task. The principal thing to keep in view is this, that when this gradual suppression is observed it behoves us carefully to scrutinise the bodily condition of the patient generally. The suppression is an important symptom, not in itself, but as indicative of some, perhaps deeply seated, morbid change, the early detection of which may be of the greatest service to the patient, if a right use be made of the knowledge thus acquired. The more common of the general constitutional conditions leading to the suppression now under consideration are:—*long-continued anxiety of mind, plethora, chlorosis, anæmia, severe hæmorrhages, or long continued discharges from the various mucous surfaces, deposition of tubercle in the lungs or other organs.*

Premature termination of the catamenia, which may be considered as a form of amenorrhœa, may be caused by chronic disease, by severe and repeated hæmorrhages, &c., or it may occur without any assignable reason. In the case of a woman more than thirty years of age, the amenorrhœa may turn out to be permanent, although, of course, this could not be known at first.

Of the *Local causes* of gradual suppression, the following are the chief. *Disease of the ovaries* is often attended from the first with amenorrhœa, but not by any means always. When one ovary alone is affected, the menstrual function may go on appa-

rently as usual. In six out of fourteen of Dr. West's cases of ovarian disease in which suppression of the menses took place, it was the first symptom. As a rule, it may be stated that the disturbances of the menstrual phenomena do not afford reliable data in the diagnosis of ovarian disease. *Chronic peritonitis*, resulting in the formation of constricting bands over the ovaries—a condition to the frequent occurrence of which Dr. Tilt has, in this country particularly, called attention—may give rise to amenorrhœa of this kind. *Chronic hypertrophy* of the uterus is often associated with amenorrhœa, and may be its sole discoverable cause. This condition of the organ is met with in prostitutes, in cases of undue sexual indulgence, or in women who have had frequent and rapidly succeeding pregnancies. *Fibrous tumour* of this organ also now and then produces amenorrhœa. Absence of menstrual discharge is sometimes noticed previous to the occurrence of *perio-uterine hæmatocele*. *Stricture of the cervical canal of the uterus*, occurring after pregnancy, or produced by the repeated application of caustics to the os uteri, is an occasional cause of this form of amenorrhœa.

Under the term *super-involution of the uterus*, Dr. Simpson has recently * called attention to a condition which is considered by him a cause of amenorrhœa. Here the uterus is found smaller than in the normal state—menstruation has not made its appearance since a previous lactation. The organ is stated to be under these circumstances friable, and the patient is most frequently in a state of constitutional ill-health. Chiari had previously described two cases in which this condition was present. The term 'premature senile atrophy' is applied by Chiari to these cases.†

The *Physiological* causes of catamenial cessation require no detailed consideration.

2. PLUS CONDITIONS OF THE CATAMENIA: DISCHARGE GREATER THAN USUAL.

In order to deal with this subject clinically and practically, and therefore usefully, it will be convenient to group together cases in which the *menstrual discharge is excessive in quantity*, and those in which there is *hæmorrhage from the generative organs*; and for this reason, until the diagnosis is made out, it is impossible to say whether the sanguineous discharge be really

* Clinical Lecture on Amenorrhœa, *Med. Times and Gazette*, 1861.

† *Klinik der Geburts*, 1855, p. 371.

a menstrual discharge at all. The case may turn out to be one of miscarriage, or of hæmorrhage of independent character.

I propose, then, to consider together that large group of cases in which there is

UNUSUAL DISCHARGE OF BLOOD FROM THE GENERATIVE ORGANS.

In most of these cases, the discharge of blood proceeds from the uterus; but it is well to be aware that bleeding from the vaginal walls (as in an interesting case related by my friend Mr. Oubr ), or from the vaginal outlet or urethra, may take place. Sometimes the pudendal veins become varicose, and burst; this rare accident generally occurring in women who are pregnant.

Excluding these possible but rare occurrences, we come to that large class of cases in which the uterus is the source of the discharge.

Now, it may possibly save some misunderstanding, if we enquire, in the first place, *what is meant by an 'unusual discharge'?* To this a very different reply would be given by different patients. One patient will think nothing of a discharge which to another would appear a very serious affair; and it may be that the two are both right. The term 'unusual' has two meanings, a relative and a positive one—a consideration which is most important as regards the diagnosis. It is also most important as regards the treatment. It does not follow, because it has become 'usual' for a particular patient to have a profuse discharge at the menstrual periods, that it is therefore 'right.' What may be very usual may require very decided interference. Hence, it will not do to admit without investigation the statement of a patient that the quantity of the discharge is unusual, or the reverse.

Further, before entering on the question of the diagnosis, it must be borne in mind that the uterus is lined by a membrane, from the surface of which blood is periodically exuded during what may be called menstrual life; and it requires but a small thing to provoke a hæmorrhage from this surface. There is no necessary relation, in fact, between the cause and the effect. A very severe hæmorrhage may occur in connection with some very trifling alteration in the uterus itself—even in the absence of any change at all. Indeed, in the question of the diagnosis of a case of unusual discharge of blood from the uterus is involved the whole pathology of hæmorrhages. Lastly, the functional exercise of the female organs of generation, the processes of gestation,

parturition, &c., involve changes and consequences with which discharges of blood from the uterus are very frequently associated.

In considering that large class of cases in which there is unusual discharge of blood from the generative organs, we may advantageously divide our cases into two series,—(A) Those in which the unusual discharge occurs coincidently with a menstrual period; and (B) those in which the unusual discharge is *not* coincident in point of time with the menstrual periods. The latter series will, of course, include hæmorrhages occurring after menstrual life has ceased.

(A) CASES IN WHICH THE UNUSUAL DISCHARGE OCCURS COINCIDENTLY WITH THE MENSTRUAL PERIOD: EXCESSIVE MENSTRUATION.

Under this head are included those cases in which an unusual discharge of blood occurs at the menstrual periods, the patient being in the interval free from discharge of a sanguineous nature.

Two distinct sets of enquiries have to be made when a reputed case of profuse menstruation (menorrhagia, as it is usually termed) comes before us. Firstly: Is the discharge really excessive? and secondly: If it be profuse, what is the cause thereof?

The previous history of the patient alone will supply us with an answer to the first question. Having ascertained what the individual type of the catamenia, so to speak, is, the deviations from that type will be more easily recognised. The catamenial secretion appears to be naturally more profuse in some individuals than in others, as already remarked; the quantity of the secretion being great, or the period during which it is observed being extended, from the presence of what may be characterised as idiosyncrasy, from the influence of climate, age, and the like. All these circumstances must be taken into account in giving an answer to the question, 'Is the catamenial secretion excessive?' In practice every form and degree of change from the normal individual type will be encountered. The change may be abrupt, or gradual; and the degree of importance attached by the patient to the fact of a change having occurred is by no means an indication of its importance, abstractedly considered. In many cases, the state of the general health informs us at once that the secretion is 'excessive;' but it is not always so.

Having determined that the quantity is really excessive, we go a

step further, and endeavour to ascertain the *cause*. This enquiry is often a very difficult one, the number of conditions capable of giving rise to profuse menstruation being so considerable, and the exciting cause being not unfrequently something so trifling as to elude our search. Moreover, having once begun to be profuse, the discharge sometimes continues to be profuse after the exciting cause has been removed and is no longer in operation. Hence it is by no means an easy matter to say, in some cases, whether the general disorder of the health which is present is caused by, or is a cause of, the excessive menstrual discharge.

Profuse menstruation is very frequently witnessed at the period when menstruation is about to cease,—*climacteric menorrhagia*,—and very frequently also hæmorrhages at other times than at the menstrual period are associated with profuse menstruation. This is a very important class of cases.

The menstrual discharge may be profuse because the *blood itself is in a vitiated state*, or because the *general abdominal circulation is in a defective condition*, or because there is *some actual disease or alteration of the uterus or adjacent organs present*. It is probable that most cases of profuse menstruation depend on combinations of various degrees of each of these; the one leading to the other, surely, but imperceptibly. This consideration alone is sufficient to show how difficult it must be to arrive at a *true* diagnosis of the nature of the case before us; and in point of fact it is for this reason impossible to lay down a series of rules for forming a diagnosis complete and applicable to every case. The acknowledged difficulty of the subject has led to this, that generally no attempt is made to push the diagnosis further; and the treatment is too often, consequently, one merely directed to the removal of the present evil—the excessive discharge. Thus originated the old classification of menorrhagia into ‘active’ and ‘passive.’ In certain cases, the treatment of the immediate symptom—the excessive discharge—is really all that is required; in other cases, this consideration is made to supersede all others by the gravity of the symptom itself, as in cases where the discharge is so excessive as to threaten the patient with dissolution.

The mere quantity of the discharge is no indication as regards the diagnosis. Neither do the symptoms accompanying the discharge assist us. Our conclusion must be formed from a careful examination of the previous history of the patient; and in many cases a physical examination of the uterus from the vagina must be made before we are in a position for giving an opinion as to the

cause of the disordered condition present. In some cases, all the pains we may take are unavailing, and the cause eludes our investigation.

The Local Causes of Profuse Menstruation

are very numerous. For the sake of convenience a detailed consideration of these is for the present postponed. They are all, almost without exception, capable of giving rise to discharges of blood at other times than the menstrual periods. Hence the *local causes of profuse menstruation* and the causes of *unusual loss of blood at other than the menstrual periods* will be conveniently considered together. Most of the conditions with which these irregular hæmorrhages, of various degrees of intensity, are usually associated, are insidious in their mode of origin; profuse menstruation is generally the forerunner of these hæmorrhages, and arises from a similar cause.

General Causes of Profuse Menstruation.

To give a complete account of the different general conditions which may, directly or indirectly, lead to profuse menstrual discharge, would occupy more space than can be devoted to it in this place. All that can be done is to indicate, for diagnostic purposes, the direction in which enquiries should be made. There is one rule which may be usefully kept in view, open, as it is, to numerous exceptions, and it is this: that when the only thing wrong about the discharge is its *excessiveness*, and when this state of things is, or has become, chronic, it generally turns out that the cause in operation is a constitutional one, and that the uterus and adjacent organs are free from actual disease. This distinction often broadly, but by no means universally, serves us in practice to distinguish between cases which do not, and those which do, necessitate a vaginal examination.

a. The *chronic, regular cases of profuse menstruation* are such as come more commonly under our notice. These cases, as just observed, usually arise in connection with what may be termed general causes, though not by any means invariably. Most of the conditions capable of causing this form of profuse menstruation are such as are known to have a debilitating tendency. *Bright's disease of the kidneys*, indicated by an albuminous condition of the urine, generally accompanied also with œdema of the ankles, eyelids, &c., is one of the most important causes of

menorrhagia. *Excessive lactation* is another equally important cause; patients are often excessively debilitated under these circumstances: as a further consequence in these cases of excessive lactation, *mania* is not unfrequently observed. *Long-continued mental depression* is both a cause and an effect of menorrhagia. Then we have a large number of cases due to *chronic disorder of the digestive organs*, leading to congestion of the uterus and pelvic organs generally, *chronic affections of the great viscera, the heart, lungs, and liver*, also giving rise to the congestion of the pelvic organs, and, short of actual disease, general derangement of the system produced by *luxurious living*, and *sedentary or unhealthy occupations*. Ovarian irritation and over-excitation are, probably, causes of this form of profuse menstruation more often than is usually admitted; the most frequent cause of this excessive ovarian irritation being *inordinate indulgence in sexual intercourse*. In cases of *purpura and allied affections*, profuse menorrhagia is often observed.

Residence in damp or marshy districts where *malarious influences* are rife, has been shown to be the cause of profuse menstruation in certain cases, and hence menorrhagia is not unfrequently present together with intermittent fever. *Residence in tropical climates* is, in the case of Europeans, followed, in most cases, by profuse menstruation, dependent, probably, on excessive congestion of the abdominal and pelvic viscera; indeed, in most cases where women return to England from India in a broken-down state of health, menorrhagia is the prominent symptom.

According to my own experience, young women in whom there are signs of a tendency to, or an actual development of, *tubercle*, are very frequently the subjects of profuse menstruation, the cause being, probably, the condition of the blood.

Profuse menstruation is now and then a sequel to *fevers*, and it may be observed *after severe inflammatory attacks*, as of the lungs. In such cases, the circumstances preceding the profuse menstruation would explain its occurrence. The profuse menstruation is due in such cases to the condition of the blood itself.

Menorrhagia may be present *in cases of lead-poisoning*. It was first pointed out by Paul* that abortions are very frequently observed in women subjected to the influence of lead, and also that in the same class of cases menorrhagia is very common. I have observed cases the facts relating to which are quite confirma-

* *Arch. Gén. de Méd.* 1860.

tive of Paul's statements. The subject of the influence of lead-poisoning in thus inducing menorrhagia and abortion is both novel and important.

Unusual discharge of blood at the regular catamenial periods, is more frequently observed in connection with general causes, and under the various circumstances just alluded to; but not always. If the patient have been suffering for any considerable time from the profuse menstruation, it becomes necessary to institute a vaginal examination. Slight local changes in the uterus are often found to occasion profuse menstruation, and the object of the vaginal examination would be to search for evidence of the presence of such local changes.

b. Cases in which there is an *abrupt appearance of profuse menstruation* require a special mention. Of late years, it has been shown that a sudden attack of this kind has, in a certain number of cases, been associated with a most dangerous and alarming accident, the pouring out of blood in the pelvis, in the neighbourhood of the uterus, either into the peritoneal cavity, or into the cellular tissue beneath the peritoneum, giving rise to the formation of a tumour—*peri-uterine hæmatocele*—and the production of a series of symptoms of a highly interesting and important character. The sequence and intensity of the symptoms, of course, vary in each case; they often present themselves in the following order:—Previous good health, as regards menstruation, abrupt appearance of a considerable flow of blood from the uterus at a menstrual period, great pain in the abdomen, and symptoms as of perforation, a blanched condition of the skin, and all other signs of violent hæmorrhage, syncope, &c. The patient may die from the actual loss of blood effused under these circumstances into the peritoneum, or from the effects of the subsequent changes in the clot there formed. The accident termed *peri-uterine hæmatocele* is not always accompanied by profuse menstruation; indeed, it very frequently happens that at the time of the occurrence of the internal hæmorrhage, the external discharge is not observed. The most common case is perhaps that in which menstruation, having been generally and for some time rather profuse, becomes for a time either suppressed or much less than usual; the symptoms of internal hæmorrhage then suddenly appearing. Irregularity of menstruation of some kind or other generally precedes the attack.

The practical fact to bear in mind is that a suddenly occurring attack of profuse menstruation may be associated with this dangerous accident. The presence of *peri-uterine hæmatocele*—

that is, of the tumour constituted by the effused blood near the uterus—is to be ascertained by vaginal and by abdominal examination. The tumour so formed is often of very considerable size.

The peri-uterine hæmatocele is not, it must be recollected, the *cause* of the excessive menstruation. The cause of both the excessive menstruation and the hæmatocele will be found in some predisposing general condition of the patient, or some previously existing change in the ovaries, tubes, &c., or both general and local disease combined. Further remarks on the diagnosis of these cases of hæmatocele will be found under the head ‘Examination of the Vagina.’

(B) CASES IN WHICH THE UNUSUAL DISCHARGE OF BLOOD IS NOT COINCIDENT WITH THE MENSTRUAL PERIOD.

All cases of hæmorrhage from the uterus which are not accounted for, so to speak, by menstruation, are included under this category. Care must be exercised in distinguishing between cases in which the discharge is menstrual, and those in which it is due to some other cause. The tendency with patients is to regard every discharge of sanguineous fluid from the genitals as menstrual; and many of the recorded cases of menstruation in women advanced in life turn out, on strict examination, to be really cases of hæmorrhage due to other causes.

Many of the causes now about to be considered, and which are capable of giving rise to losses of blood at irregular periods, are also efficient in producing excessive menstruation. The early stages of many local uterine affections are, in fact, attended with excessive menstruation as a symptom; and in such cases there may be *irregular* hæmorrhagic loss attending the same affection at a more advanced period. At least, such is frequently observed to be the case.

In most of the cases now to be considered, a vaginal examination will be found necessary in order to render the diagnosis a satisfactory one.

Hæmorrhages appearing at the generative passages may arise from purely *constitutional causes*, the uterus itself being sound and healthy. In such cases the mucous membrane allows blood to escape, owing to some change in the composition or character of the blood itself, or to disturbances of the circulation from disease of other organs, just as is the case in reference to some other mucous membranes. Where the hæmorrhage is due to constitutional causes, examination could reveal nothing of moment; and, unless the nature of the disturbing agency were very obvious

and apparent, there might be some difficulty in determining the nature of the case. It is unnecessary here to repeat what has been already said in reference to the subject of the influence of constitutional conditions in the production of hæmorrhage.

Irregular Appearance of Menstruation from Pyrexial Disorders.—Perroud (Gaz. Méd. de Lyon, Jan. 1862) has observed that an occasional effect of the onset of the pyrexial disorders is the appearance of the menstrual flow a few days before its time. In scarlet fever, in small-pox, in measles, unusual profuseness of the menstrual discharge, in some cases associated with the accident known as peri-uterine hæmatocèle, has been observed.

A class of cases requiring a few words by themselves are those in which hæmorrhage occurs from what may be termed *functional* causes, the hæmorrhage being an accompaniment or accident of exalted activity of the uterus or ovaries—more properly speaking, perhaps, of the ovaries. Sexual excesses, or circumstances calculated to excite and maintain the existence of erotic tendencies for any length of time, produce occasionally such a degree of functional activity of the ovaries as results in the production of profuse menstruation, and of hæmorrhage at non-menstrual periods. The amount and character of the menstrual discharge being thus guided and affected by the condition of the ovarian function, it is not to be wondered at that, when the *ovaries are the subject of disease*, the uterine sanguineous discharge should be also deranged. More generally, the presence of ovarian disease diminishes, or at all events does not increase, the menstrual flow; but the reverse has been pretty frequently observed. Mechanically, also, and in common with other adjacent organs, disturbances of the circulation in the ovaries may tend to hæmorrhage from the uterus. The practical deduction is that, in a given case, functional activity of the ovaries, or disease of these organs, may be the cause of uterine hæmorrhage, the uterus itself being really in a healthy state.

It is a matter of some importance to bear in mind, that the previous occurrence of hæmorrhage, from whatever cause, or this combined with menorrhagia, produces after a time an actual appreciable change in the uterus itself; and there is a possibility of mistaking the effect for the cause. The uterus cannot be for a considerable time the seat of repeated hæmorrhage, or, indeed, of continuous exalted activity, without becoming in a manner diseased. To this class of cases belong very many of those which come before us in practice; and, to treat these cases to ad-

vantage, we must endeavour to get at the whole truth respecting them. A soft, somewhat enlarged, flabby condition of the uterus, is discovered in many instances of this kind; and, besides this, there is no organic lesion discoverable. To determine the point of time at which the functional or constitutional passed into the local disorder is important; for that diagnosis is not complete which does not take cognisance of the successive changes and events which occurred from time to time.

Mental disturbances may give rise to a flow of blood from the uterus of purely menstrual character, although not appearing at the ordinary menstrual period.

Leaving these general causes of hæmorrhage, we may now consider those special pathological or other conditions of the sexual apparatus known to be associated with hæmorrhage from the organs in question.

The class of cases first demanding attention are those in which the loss of blood is connected with the presence, or previous presence, of the fruit of conception within the uterus.

Abortion.—A discharge of blood from the generative organs in a case where menstruation has been previously absent for a month, or for a period of two or three months, and in a woman whose age does not forbid the idea of pregnancy, should *always*, whatever be the condition and circumstances of the patient, lead the practitioner to suspect the occurrence of abortion. It need hardly be stated, however, how important it is that these suspicions should not be rashly expressed, nor until further enquiry or examination throw more light on the matter.

In cases of abortion, the menses are found to have been absent for from two to four or five or six months; the hæmorrhage which occurs begins suddenly, preceded sometimes by shivering, sickness, pains in the back and thighs, &c.; and is accompanied by pains at the lower part of the abdomen, resembling, and in fact identical with, those of labour. The hæmorrhage is not continuous, but pauses, and recurs again after ceasing a few minutes or more. At each pause in the flow of blood there is a cessation of the pain. The fact that the pains continue, notwithstanding that there may have been a considerable flow of blood, is one of the points on which we are instructed most to rely in the diagnosis of a case of abortion from one of excessive menstruation following suppression; but, practically speaking, the distinction is not worth so much as has been claimed for it. It often happens that there is a persistent slight trickling of blood, the flow of blood being

suddenly increased from time to time. There is generally, too, a periodicity in the recurring attacks of pain and hæmorrhage. At the end of a few hours, or, in some cases, a shorter interval, the ovum, or portions thereof, are expelled, together with clots; and if the expulsion have been complete, the hæmorrhage ceases, unless perchance there be a second ovum still in the uterus, as in cases of twins. The expulsion may be delayed for a much longer time, or the embryo may be expelled, leaving the membranes behind; and in such cases the hæmorrhage continues, becoming at times very profuse. An abortion can, of course, only occur in a patient who has reached, but who has not exceeded the limits of, the child-bearing age. Hæmorrhage from the uterus, more frequently than is usually supposed, occurs from abortion at about the second month in married women; the real cause being often overlooked, and the case supposed to be one of simple menstrual irregularity. The diagnosis of early abortion from excessive menstruation is indeed often far from easy. If the abortion take place at an early period, examination of the uterus from the vagina gives no positive data for determining the point. The only reliable evidence obtainable at this period is that afforded by a very careful examination of the clots or matters expelled from the uterus. See 'Substances expelled from the Generative Passages.' At a later period, the evidence from the physical condition of the uterus is more decided.

The diagnosis of abortion from cases in which there has been, previous to the occurrence of the hæmorrhage, *retention of menstrual fluid*, is very important. The phenomena present—viz. the uterine contractions and pains, the discharge of blood, the previous absence of the catamenia—may be the same in the two cases. Whereas, however, in abortion, the attack is single, and there is generally an absence of like symptoms for the two or three months previous, in the other class of cases there have been more or less constant pains present at the lower part of the abdomen for two, three, or four months, increasing in severity periodically, and culminating in a sudden more or less profuse hæmorrhage. At least, such is one method in which menstrual retention may terminate.

If an abortion have occurred recently, and hæmorrhage take place a few days after, recurring possibly on successive occasions, it may turn out, on enquiry or on examination, that the embryo has been expelled, but the placenta, or some portion of the membranes, retained. The placenta is small in the case of an ovum at three

to four months; but yet, when retained in the manner stated, it may be the cause of severe and extensive hæmorrhage. When the embryo is expelled earlier than this, and before the placenta is formed, the part left behind is constituted chiefly by the decidua, and, as I have had occasion to observe, this substance may become thickened and hypertrophied to a very remarkable extent. A vaginal examination is always necessary in a case of suspected abortion.

During the last three months of pregnancy, hæmorrhage now and then occurs from the placenta being attached partially or entirely over the mouth of the uterus—*placenta prævia*. The character of the hæmorrhage from *placenta prævia* is, that it comes on suddenly, and without external apparent cause, generally also without warning; that it is often very profuse, so much so as now and then to kill the patient before medical assistance can be obtained. The hæmorrhage ceases, or, at all events, only a very slight loss is sustained, and again recurs, perhaps; but the noticeable fact about it is its uncertainty. Practically, we draw the inference, that when, in the later part of pregnancy, hæmorrhage suddenly occurs, the presence of *placenta prævia* is to be suspected; and, if we suspect it, it is our duty without delay to endeavour by examination to put the matter beyond doubt; otherwise the life of the patient may be imperilled.

Between hæmorrhage the result of an abortion, and of *placenta prævia*, there is this difference: in the case of abortion, the patient may or may not be aware of her pregnant condition, or, knowing her pregnant state, may have reason for wishing to mislead her attendant; in cases of *placenta prævia*, the patient is usually known to be pregnant.

Hæmorrhage may occur during pregnancy, and may be profuse, when there is nevertheless no implantation of the placenta over the os uteri; the cause being a separation to a slight extent of the placenta from the uterus. Such hæmorrhages have been called in obstetric language ‘accidental,’ as distinguished from the ‘unavoidable’ hæmorrhages the result of *placenta prævia*. An ‘accidental’ obstetric hæmorrhage may or may not be followed by expulsion of the child. Further information on these latter points will be found in any standard obstetric work.

Hæmorrhage of irregular occurrence is noticed in cases of *mole pregnancy*, as they are termed.

Unusual discharge of blood *in a woman who has been recently delivered* may proceed from *retention of a portion of placenta or membranes*, or from *inversion of the uterus*.

As regards the diagnosis of *cases of retention of a portion of the placenta or membranes*, there is not usually much difficulty. Hæmorrhage occurring within a few days after delivery would lead us to suspect that a portion of the placenta had been retained. It may happen, however, that the amount of hæmorrhage produced by the presence of the foreign body in the uterus may for some days be so inconsiderable as to attract no particular attention, may be considered as 'regular' by the nurse, and yet at the end of that time there may be profuse attacks of hæmorrhage. The facts relating to a case of this kind, which came indirectly under my notice, are strongly impressed on my memory; the hæmorrhage was postponed in the manner here alluded to for some days, was then severe and continuous, and the patient sank under its effects. In cases of retention of a portion of the ovum after abortion, which cases are not uncommon, the previous occurrence of such abortion should lead us to suspect the nature of the case. The portion of placenta or of the ovular membranes retained may be very small, and yet be sufficient to give rise to very profuse hæmorrhage.

Inversion of the Uterus, partial or complete, is a *post-partum* condition capable of giving rise to severe hæmorrhage. Curiously enough, the existence of this condition is sometimes found to have escaped recognition for so long a time after the delivery that the diagnosis of the nature of the case has been rendered very doubtful.

Hence the necessity for calling attention to the fact that hæmorrhage, occurring some time after a particular labour, may be found to be due to this condition—inversion. As a rule, where the accident has escaped recognition, it is found that there has been hæmorrhage occurring at intervals ever since the delivery; that the hæmorrhage was at first very severe; that it gradually became less; that subsequently it assumed the character of excessive menstruation, the hæmorrhages for the most part occurring coincidently with the usual catamenial periods; that between these, however, great losses of blood had been often observed. The hæmorrhage is not profuse and sudden in character, but it is a continuous drain going on for a certain time, and then ceasing partly or entirely. In such cases there is also profuse and purulent leucorrhœa. The symptoms, of course, date from a previous pregnancy; and, in nine cases out of ten, it is found that undue force was used in the removal of the placenta after the delivery in question. Polypus of the uterus gives rise to symptoms very

closely resembling those of inverted uterus. Examination is, of course, necessary when the presence of inversion is suspected.

The cases next to be considered are those in which the loss of blood is *not connected with pregnancy*, or, necessarily at least, with menstruation, but in which there is some local or general condition present which determines the occurrence of the discharge. It ~~must~~ be recollected that many of the conditions in question do *also give rise* to profuse menstruation.

Here, perhaps, may be appropriately mentioned a rare cause of profuse loss of blood, viz. *the presence of a clot of blood in the uterus*. Thus, in a patient who is (as in a case related by Dr. Steiger,* where pneumonia was the cause) the subject of profuse menstruation, a portion of the blood coagulating in the uterus may give rise to subsequent very troublesome hæmorrhage, the source and cause of which would not be at once evident.

Hæmorrhages of severe and profuse character are produced by various organic diseases of the uterus, and under certain other circumstances also. These will now be enumerated, and their principal diagnostic features indicated.

Cancer of the Uterus.—Of this occasionally insidious, and very fatal disease, hæmorrhage to a greater or less extent is a prominent symptom, though not invariably so. The amount and periods of occurrence of the hæmorrhage vary according to the seat of the disease and the stage to which it has advanced. When a woman has entered on what may be called the ‘cancerous age,’ and begins to suffer from menorrhagia with occasional losses of blood besides, or when, having ceased to menstruate, hæmorrhages are observed, the possibility of this symptom being due to cancer must be recognised. Later, that is to say when the disease is more advanced, hæmorrhage is rarely the only symptom present, and we have generally much pain, an offensive sanious leucorrhœa, and constitutional disturbance. One point must particularly be recollected, that, for a certain time, hæmorrhage may be the only sign observed.

Thus, in a series of cases carefully observed by Dr. West, hæmorrhage was the first symptom in 43·9 per cent. of the cases. Dr. West insists on the fact that in certain cases there may be an entire absence of the sign now under consideration, there being only profuse menstruation present. Another circumstance, also rare, but which may be subject of observation, is that the hæmorrhage is unattended with pain. In an instance noted by myself,

* Schmidt's *Jahrb.* vol. cx. p. 311.

the first occurrence of hæmorrhage was produced by sexual intercourse, the patient, aged 48, being affected with undoubted cancer.

Where the cancerous affection of the uterus is situated in an unusual locality, exceptional symptoms may be noticed. Thus, a case is related by Dr. Keating of Philadelphia,* where an enormous cancerous interstitial tumour of the uterus absolutely prevented delivery, in a patient æt. 30. The patient had had one attack only of hæmorrhage four years previously; menstruation had been, contrary to what is usual in such cases, *scanty*. After death, it was ascertained that the menstrual discharge had been fœtid. The patient had, it is stated, a suspicious cachectic appearance.

As bearing on the diagnosis, it may be well to mention here the duration of cancer of the uterus. Lebert gives an average of sixteen months; Dr. West found the average duration to be fifteen months. Hence, in a given case, if we be informed that the patient has been subject to irregular (*i. e.* non-periodical) hæmorrhages for upwards of two years, this fact would be against the probability of the hæmorrhage being due to cancer uteri. It is right here to mention that Dr. Simpson's experience appears to have led him to fix a longer period as the ordinary duration of cancer uteri. 'Patients usually die in from two to two years and a half after the detection of the disease,' says this author.† According to the same authority, where the disease occurs in aged persons, and has taken on a slow and senile character, its course may be very protracted.

Cauliflower Excrescence of the Os Uteri, regarded by Virchow as the type of malignant disease occurring in this part of the body, gives rise, as a rule, to hæmorrhages of an irregular character. The hæmorrhage is usually brought on by walking, by exertion of any kind, by coughing, sneezing, &c. There is usually offensive watery discharge present in cases of this disease. Its duration exceeds that of ordinary cancer of the uterus.

Corroding Ulcer of the Os Uteri, a rare affection, is attended with hæmorrhage, like that of ordinary cancer, of which disease it is probably only a variety.

Respecting the diagnosis of all cases of suspected cancer, there is this remark to be made, that careful digital examination is always necessary. Here the diagnostic signification of the hæmorrhage only has been alluded to.

Climacteric Hæmorrhages. — Side by side with 'cancerous'

* *Am. Journ. Med. Sc.* Ap. 1861, p. 405.

† *Medical Times and Gazette*, Jan. 15, 1859.

hæmorrhage, we may consider what have been called 'climacteric' hæmorrhages; practically, the necessity of separating cases of the latter from those of the former kind often comes before us. When the menstrual flow is finally about to cease, profuse losses of blood are apt to occur, and to recur at intervals for a considerable time.

In distinguishing these climacteric from cancerous hæmorrhages, the age of the patient does not help us, nor, indeed, can it be pointed out with ease what are the distinguishing features. In the nature of the blood itself, however, we find some data for diagnosis: thus, the blood is of a deep red and coagulable in hæmorrhages of simply climacteric origin; whereas in cancerous cases, unless it be, perhaps, at the very origin of the disease, the blood is fœtid and ichorous. Climacteric hæmorrhages are more often observed in sanguine temperaments, and in those who have been the subjects of profuse menstruation.

The menses may have ceased for a few months before the hæmorrhagic attacks; or the hæmorrhage may be periodic, resembling so far the ordinary catamenial discharge. When there have been hæmorrhages, recurring for some months, at about the period of sexual involution, we may presume, negatively, against the existence of cancer if there be no pain or offensive discharge; the absence of any marked deterioration of the general health would also, under such circumstances, be against the idea that such hæmorrhages were due to cancer.

Conversely, we must be careful not to confound hæmorrhages coming on a few months or a year or two after the cessation of the catamenial flow with climacteric hæmorrhages. The distinction between hæmorrhage due to cancer setting in subsequently to the cessation of the catamenia and climacteric hæmorrhage, may be, and often is, difficult; but a careful digital examination will generally decide the question satisfactorily.

The several kinds of *Polypi* of the uterus produce hæmorrhage, often very severe, and sometimes of an ultimately fatal character. The abundance of the hæmorrhage is not by any means in direct proportion to the size of the polypus, but depends rather on the degree of vascularity present. The hæmorrhage is irregular in character, and, coinciding more or less with the menstrual discharge, as it frequently does, it may be at first overlooked; its tendency is to increase in quantity, but the march of the symptoms is slow, and if the loss be not considerable, the general health may remain little affected. A most important class of cases are those in which polypi, entirely within the uterus, occasion severe hæmorrhage, the cause

of the hæmorrhage escaping recognition owing to the absence of dilatation of the os uteri. Dr. Simpson was the first to point out the necessity for exploring the interior of the uterus, by dilatation of the os uteri, where the cause of the severe menorrhagia is only explainable on the supposition that a polypus is present. When the polypus becomes very large, 'pressure' signs, such as difficult micturition, difficult defæcation, accompany the enlargement of the uterus which results. Abortions are frequently due to the presence of uterine polypi. Clots or partial moulds of the uterine cavity are found sometimes in the discharges. With reference to the kind of polypus present, the nature of the hæmorrhage gives us no precise information. Very profuse hæmorrhage sometimes results from very small tumours—'mucous' polypi, as they have been called—situated just inside the os. In cases of polypus uteri, there may be profuse leucorrhœa, and there may be much pain; but the leucorrhœa is not, except in rare instances, offensive, as it is in cancer, and the pain is of a different character. Moreover, the patient with polypus may, comparatively speaking, remain *in statu quo* for some time—an observation which does not apply to cancer. Cases are not rare in which uterine polypi remain for years undetected, the hæmorrhage, by its long continuance, finally sapping the very foundations of life, the skin becoming etiolated and withered-looking, and the patient reduced to an extreme state of feebleness.

Fibrous Tumours of the Uterus, which have a composition identical with that of fibrous polypi, both being but growths of the uterine tissues, may or may not cause hæmorrhage, the position of the tumour very much affecting this result. Thus, if the tumour project into the cavity (sub-mucous variety), the result, as regards the hæmorrhage produced, will be pretty much the same as if a polypus were present. The further the tumour is from the mucous membrane, the less frequently, as a rule, does hæmorrhage occur. The early stages of these growths may be unattended with marked symptoms; hæmorrhage may be entirely absent. Menstruation is rendered excessive, both as regards duration and as regards the quantity poured out: this symptom may go on for some time without attracting attention, when, sooner or later, other symptoms, interperiodic hæmorrhages, abortions, &c., are usually observed. These fibrous growths often attain a very considerable size, and they then produce pressure signs, as in the case of large polypi. The hæmorrhage produced by the presence of fibrous tumours is often accompanied by a good deal of pain,

and the pain is spasmodic, somewhat resembling pains due to abortion. Cases of abortion are distinguished from cases of fibrous tumour with hæmorrhage by the circumstance that the pain and the hæmorrhage cease together in the former instance, but not in the latter. In the case of hæmorrhage suspected to have its origin in the presence of uterine polypi or fibroid tumours, a careful examination is necessary: the uterus must be examined both from the vagina, and through the abdominal walls.

Granular Condition of the Mucous Membrane of the Uterus.—

It has been asserted that, in certain cases, profuse menstruation has been connected with an altered condition of the mucous membrane of the uterus, characterised by the presence of fungus-like vegetations on the surface.

Tubercle of the Uterus generally has its seat in or immediately beneath the mucous membrane. When present it usually gives rise to hæmorrhage. Rokitansky has recently stated that tuberculisation of the uterus is not rarely primitive; and that it frequently shows itself in the uterus after the process of parturition.* We should expect, in a case of uterine hæmorrhage from this cause, to have evidence of the presence of tubercle in other organs, and of the constitutional effects thereof. Pathologically, tubercle of the uterus has been usually supposed to be rare; but hæmorrhage from the uterus in tuberculous women, dependent on the state of the blood rather than on organic local changes, is not so uncommon.

Enlargement of the Uterus, due to chronic inflammation, defective involution after delivery, or to the presence of a sort of hypertrophied condition without previous impregnation, is very commonly associated with hæmorrhages. This condition of the uterus is very frequently indeed associated with menorrhagia, and there are few ordinary cases of profuse menstruation in which this condition of the uterus is not present. The organ is larger than usual, its tissue is less firm, it is unduly congested and otherwise altered. The condition is frequently a result of imperfect involution of the uterus after delivery, the organ not subsequently returning to its proper size. The subjects of this condition of the uterus are generally very much debilitated and out of health, and they are very liable to pain in the pelvis and in the region of the uterus; they very commonly, also, suffer from profuse leucorrhœa.

Hypertrophy of the Cervix Uteri, the cervix being converted into a large rounded tumour projecting low down in the vagina, or even beyond it, may give rise to hæmorrhage and other serious

* Schmidt's *Jahrb.* vol. cxi. p. 61.

inconveniences. The symptoms closely resemble those of polypus uteri, and the condition has been frequently confounded with polypus or prolapsus of the uterus. The condition usually termed *inflammatory enlargement of the cervix uteri* may also give rise to hæmorrhages.

Hæmorrhages may arise in connection with certain altered conditions of the position of the uterus, from causes which may, indeed, be termed *mechanical*.

Of these, *Flexions of the Uterus* are, unquestionably, the most important. The fundus uteri becomes tilted backwards, projects into the fossa between the uterus and the rectum, or it is tilted forwards and rests on the bladder: in both cases the uterus is bent on itself. Opinions are divided as to the comparative frequency of retro- and ante-flexion, but retroflexion certainly comes more often before us in practice. The point, however, more immediately interesting here is that hæmorrhage, either very profuse menorrhagia, or interperiodic hæmorrhages combined with menorrhagia, are not seldom produced by the retroflexed condition of the organ. When this latter condition is present, there is a great tendency to abortion, and, indeed, impregnation is often thereby prevented; defæcation is often painful, and micturition frequent or difficult. The hæmorrhage is not severe, as in polypus; it is not accompanied by so great a degree of pain as when fibroid tumours are present; and it is more limited to the menstrual periods than in the case of polypus. Examination is necessary if flexions are suspected to be present.

Another form of mechanical disorder liable to produce hæmorrhage is *prolapsus—descent of the uterus*, in the pelvic cavity, or even externally beyond the vulva. It is a condition of which hæmorrhage is not, by any means, one of the most marked symptoms, occurring, as it ~~does~~, only in a small proportion of the cases; but now and then the loss of blood is certainly considerable. The physical character of the ailment generally early attracts attention to its true nature.

CHAPTER IV.

SUBSTANCES EXPELLED FROM THE GENERATIVE ORGANS.

- (A) **FLESHY SUBSTANCES.**—The early Ovum, or portions thereof; Placenta; Uterine Polypus; Coagula of Blood.
- (B) **MEMBRANOUS BODIES.**—Exfoliations from the Vagina, the Dysmenorrhœal Membrane, Coverings of the Ovum, Exfoliations from the Bladder.
- (C) **VESICULAR BODIES.**—Hydatidiform Degeneration of Ovum, Hydatids.
- (D) **FACTITIOUS BODIES.**

IN this chapter are included the ‘data for diagnosis’ derived from the inspection of those bodies, solid or otherwise, submitted or obtained for examination, and reported to have been expelled or removed from the female generative passages. Questions regarding the presence of pregnancy, the presence of abortion, the possibility of impregnation having occurred, as to whether the patient has been recently delivered, &c., may have to be answered; the data for forming a conclusion thereon being only those derivable from inspection of certain substances submitted to us. Uncertain as our diagnosis too frequently is, from want of reliable information, it is extremely important, when, as in the case before us, we have *substantial* data to go upon, that we should be able to make the most of those data. An accurate conclusion respecting the nature of these bodies is often very necessary; for upon it depend very frequently determinations as to the condition of the patient, and as to the nature of the ~~affection~~ present, of the most momentous character. An erroneous and hasty opinion given under such circumstances may involve consequences injurious both to the patient and to the practitioner.

An off-hand opinion ought never to be given respecting the nature of any substance said to have been expelled from the generative passages. A careful examination of the case should always precede a conclusion as to its nature. It need hardly be observed that, in order to institute a proper examination, an intimate practical knowledge of the normal *anatomy* of the ovum, and a familiarity with its outward appearance, on the part of the observer, are absolutely essential.

From a variety of circumstances, the substances in question are frequently difficult of recognition; and it is always expedient to place them in water for twenty-four hours, or even longer, at the end of which time they will be in a much more satisfactory state for examination. The importance of adopting this precaution in the examination of cases of suspected abortion it is impossible to over-estimate. What appears on a cursory inspection to be a homogeneous fleshy mass may, after having been soaked for some hours in water, present a most elaborate structure. Great care must be exercised in receiving the statements of patients as to the nature of any particular substance which may have been expelled. Many are desirous of deceiving and giving erroneous impressions; but a much larger class are incapable of describing accurately what they do see. Ocular inspection of the specimen by the practitioner himself, and under the favourable circumstances just alluded to, is absolutely necessary, if the diagnosis is to be anything beyond conjecture.

In the very practical and valuable work of Dr. Montgomery, the substances which may be expelled from the generative passages are enumerated as follows:—‘1, an early ovum; 2, a mole; 3, uterine hydatids; 4, the membrane produced in dysmenorrhœa or other conditions of uterine derangement; 5, membranous formations from the vagina.’ This does not, however, include all the substances which may present themselves to be examined and reported on; and the arrangement here adopted will be somewhat different from that of the author just alluded to.

(A) FLESHY SUBSTANCES.

In the first place, we shall consider those substances expelled or removed from the generative passages more or less resembling *flesh* in their outward form and appearance. By the term ‘flesh’ or ‘fleshy’ masses, they would be popularly designated; and it is therefore useful practically to group them together.

The various ‘fleshy’ substances presented for examination are:—1, an ovum cast off at an early period of its growth, or arrested in its development, and retained in the uterus, constituting what is popularly known as a *mole*; 2, the placenta, or a portion thereof, retained for a time, and subsequently expelled; 3, polypus of the uterus spontaneously detached and expelled; 4, fibrous tumours of the uterus similarly separated; 5, coagula of blood.

1. Is the substance examined an *early Ovum*? In order to

answer this question satisfactorily, the observer must be acquainted with the structure of the ovum at an early period, and be able to recognise its several parts. If any portion of the body or members of the fœtus be found in the mass expelled, there can, of course, be no doubt in the matter: we have to do with an abortion. When no part or parts of an embryo are to be found, we are obliged to search for other marks by which we may recognise the product in question as the result of conception. We proceed to search for one of the following structures: the decidua materna, or external envelope of the ovum; the decidua reflexa, internal to the latter; the chorionic villi; the umbilical cord, &c.

After soaking the specimen in water, it should be carefully examined in that fluid, a blunt probe and forceps only being at first used in manipulating. In ova which come away *en masse* (a rather rare occurrence) during the first three months or so of pregnancy, the external covering will be the *decidua materna*; and this membrane is recognised by its ragged uneven appearance under water, by the presence of those bodies described first by Dr. Montgomery as 'decidual cotyledons' on the external surface, by its pyriform shape, and by the fact that there are three openings—two superiorly, corresponding to the Fallopian tubes; and one inferiorly (which latter may, however, be closed), corresponding to the neck of the uterus. The decidua is further characterised by the smooth and velvety appearance of that surface of it which is internal, and by the fact that on this surface many minute openings, just visible to the unassisted eye, are perceptible, giving the membrane a cribriform appearance. After the fourth month, this membrane is found thinner, and some of the characters just alluded to are less marked. This decidua may come away by itself, torn or separated from the ovum, or filled with the degenerated structures of the ovum.

The *decidua reflexa* is a fibrous membrane thinner than the decidua materna; and it encloses the ovum proper in great part. The most characteristic structure of the ovum is, however, the *chorion membrane*, with the *villi* which grow on its external surface. The early ovum, separated from the decidual coverings, is a closed bag covered by little delicate processes, the villi of the chorion, giving to it a shaggy appearance. In a very early ovum the villi are small and simple; but in a more advanced ovum—of two months, for example—each original villus is found to have given off branches arranged somewhat like the branches of a stem of

coral. Later still, these villi are longer, and they are then found *on one side only* of the ovum; those on the other side, not participating in the development described, shrink and almost completely disappear. The presence of chorion villi may be considered quite conclusive as to the fact of impregnation and previous conception, whether the embryo be found or not; but it is a question whether the same degree of diagnostic value attaches to the presence of the decidua materna, it being the fact that *a membrane* may be expelled from the uterus quite independently of conception, and possessing many of the characters of the decidua as above described. In the decidua resulting from pregnancy, the decidual cotyledons are present; but not in the other. This is the best distinction which can at present be given; but, from examination of certain specimens, I have come to the conclusion that cases might arise in which this means of distinguishing them might fail.

If a small sac were found having attached at a point of its internal surface the remains of the umbilical cord, this would be conclusive on the question of impregnation. In the case of early ova expelled from the uterus, one of several results may be observed. The ovum enveloped in the decidua may come away entire; the decidua may remain behind for a time; and the chorion membrane, covered by its villi, and enclosing the embryo, be expelled by itself. The chorion and amnion may remain *in utero* as well as the decidua, the embryo escaping from the uterus. In such a case, the membranes, foetal and maternal, would be expelled subsequently.

Moles.—The various substances known under the designation of moles, and which are the products of conception,* are for the most part the result of arrest of development, which may coexist with continuance of growth, of some portion of the ovum. It is very important to be aware of the fact, that an ovum, or some part of it, may remain in the uterus for a very considerable time, growing in an irregular abnormal manner, or just preserving a low form of vitality. A practical instance will show the importance of this knowledge. A woman having lost her husband five or six months may have an attack resembling an abortion, and there may be expelled a substance which the observer believes to be an ovum of two months, whereas it turns out, on examination by a

* It seems proper to confine the use of the term 'mole' to the products of conception alone.

more competent hand, to be a mole, the product of a conception previous to the husband's death. The 'fleshy mole,' as it is termed, consists of an ovum between the membranes of which blood has been effused. The blood effused has coagulated, and the result is a mass the parts of which are glued together and separated with difficulty. The villi of the chorion must be carefully sought for; and they ought to be found in all cases where there is no reason for suspecting that the ovum, with its chorionic investment, has previously escaped. The presence of organised membranes and chorion villi distinguishes the 'fleshy mole' from simple clots of blood, and from other substances presently to be more particularly considered. It must be recollected that the chorion villi do not become developed so as to constitute a regular placenta until near the fourth month of gestation. It is difficult to imagine that a foetus which has lived until the placenta has been formed could undergo a process of complete absorption, but there are very numerous cases on record to show that degrees of development of the chorion villi short of the production of a placenta frequently coexist with entire absence of the embryo, which in such cases perishes at so early a period that its size is very inconsiderable; and it then escapes detection.

There is another kind of true mole, the 'hydatidiform' or 'vesicular' mole, a description of which will be given presently.

2. *The Placenta*.—The fleshy mass expelled may be a part or the whole of a 'placenta.' When a woman has been delivered at or near the full time, and no placenta has come away, a fleshy-looking mass expelled a week or two after would in all probability be the placenta; and in such a case the signs of previous delivery would be present, the history of pregnancy, &c. The size, shape, &c., of the mass, and the presence of the umbilical cord, would externally indicate it to be the placenta. The expulsion of a retained placenta is, at least when the retention has existed for some time, usually preceded by an offensive discharge; but the placenta has occasionally been discharged apparently fresh, and without signs of decomposition.

Such cases are rarely open to much chance of misconception; but the nature of the case is not so obvious when the foetus has been expelled at an earlier period of gestation. In cases of abortion at the fourth or fifth month, the placenta may be retained for some time, its removal not having, for some reason or other, been effected at first. Cases are on record which show that the placenta may be retained within the uterus after abortion for

months and even years. An instance in point is quoted by Montgomery from Morgagni.* More than one case of the kind has indeed come under my own observation. Meanwhile, its presence in the uterus has occasioned generally severe hæmorrhages. An early placenta would be about the size of a pigeon's egg; later it would be larger. If recognised as a placenta, it would indicate a previous conception. The substances which might be mistaken for a placenta are a fibrous tumour spontaneously expelled, or a fibrous polypus similarly removed; and in both cases the symptoms, hæmorrhages, &c., might be somewhat alike. In order to settle the point, the structure of the fleshy mass must be carefully examined, if evidence as to previous pregnancy be wanting, or if that which is obtainable be open to suspicion. An early placenta is rounded, rough on one side and smooth on the other. The presence of the umbilical cord attached to one side of it would be conclusive; but this might be worn away or torn off close to the placenta. A section of the mass would, however, show vessels arranged in a peculiar manner, radiating from the centre of one surface.

3 and 4. *Fibrous Polypi* of the uterus and *Fibroid Tumours* are sometimes expelled spontaneously from the uterus. Externally, these bodies might be easily confounded with a placenta, the more especially as the preceding hæmorrhages might be considered evidence of abortion having occurred. Polypus of the uterus and fibroid tumours frequently produce abortion; and in certain cases abortion may occur in the first place, and the expulsion of the polypus which gave rise to the abortion in the second. This sequence happened, as I had reason to know, in a case under the care of a gentleman in the country; and the polypus which came away was considered, until after it had been more carefully examined, to be the placenta. The structure of a polypus or of a fibrous tumour differs widely from that of the placenta, the former presenting a fibrous texture, generally dense, and sometimes very firm; but now and then, in the case of a polypus, more spongy and loose. The insertion of the umbilical cord would be, of course, wanting. Fibrous masses containing fatty matter within them, which I believe are instances of *fatty degeneration* of fibrous tumours or polypi of the uterus, are sometimes spontaneously expelled, as in a case which I have placed on record,† or solidified

* *Op. cit.* p. 259.

† *Trans. of the Pathological Society*, vol. xi. p. 173.

by *calcareous matter*. Generally we find a previous history of 'frequent and severe hæmorrhages' when these uterine outgrowths have been expelled. The spontaneous expulsion here alluded to is not a frequent termination of their history. Masses of cancerous growths, in some rare instances, slough away and appear externally. The cancerous disease is usually far advanced in such cases, and a digital examination would reveal the origin of the expelled body.

5. *Coagula of blood* (blood-polypi, Kiwisch) retained within the uterus for some time, and expelled subsequently in a more or less firm condition, require to be discriminated from the bodies hitherto alluded to. Coagula may form within the uterine cavity in connection with uterine hæmorrhage of all kinds; after labour, in consequence of the presence of polypi, cancer of the uterus, profuse menstruation, &c. The uterine cavity is not, as a rule, very tolerant of the presence of clots; and for this reason they do not generally remain there sufficiently long to have become firm and dense. They are frequently, as Scanzoni remarks, connected with previous abortions. When the coagula are tolerably recent, they are easily broken down under pressure, or after soaking in water. Fibrous organised bodies are not to be broken up in this manner. When polypi of the uterus are present, coagula sometimes come away having a circular form like segments of rings. The polypus at the same time excites hæmorrhage, and prevents the escape of the blood; and the rings in question are thus formed. Coagula not recent may present a tolerably firm, dense, greyish, fibrinous-looking surface. The want of organisation in the mass, the presence of blood-corpuscles, would assist in the diagnosis of the nature of the substance. The centre of the mass, moreover, generally exhibits a clot of a darker colour, comparatively unaltered, which was the original nucleus of the formation.

In respect to the size and shape of clots of blood expelled from the vaginal aperture, some peculiarities are sometimes noticed. Thus, in a case which recently fell under my observation—that of the sister of a medical man—a large clot of blood, having the size and shape of the vagina, had been occasionally expelled, after much straining and pain, at the menstrual periods. It was found that the aperture of the hymen was excessively small, and, the discharge of blood being more profuse than usual, an accumulation and coagulation of the same in the vagina had occurred.

(B) MEMBRANOUS FORMATIONS.

Bodies more or less resembling 'skin' may be conveniently considered together under this designation. The skin-like substances in question may have their origin in the vagina or in the uterus.

1. *Exfoliations from the Vagina*.—Under certain circumstances the lining membrane of the vagina separates in the form of thin translucent flakes, which sometimes come away in great quantities. Dr. Tyler Smith * designates that condition of the vagina present in cases of this kind as 'epithelial vaginitis.' The flakes in question are composed of the scaly epithelium of the vagina, and under the microscope exhibit the well-known appearances of this form of epithelium. It is necessary to place them in water in order to render obvious the characters of these exfoliated products.

2. *The Dysmenorrhœal Membrane* ('menstrual decidua,' Farre).—This is an exfoliation of the lining membrane of the uterus—a sort of skin occasionally expelled from the uterus, independently of conception, after a catamenial period, and exhibiting a certain degree of resemblance to the decidua lining the uterus during pregnancy. This membrane is neither more nor less than the mucous membrane of the uterine cavity, hypertrophied and cast off. There are good reasons for believing that, normally, the mucous membrane of the uterus becomes thickened, softened, and cast off at every menstrual period; but ordinarily the membrane in question appears to be too thoroughly broken up for even shreds to be left. Under the influence, however, of certain conditions, the nature of which is at present not perfectly understood, but which probably have the effect of setting up a sort of chronic inflammation of the lining membrane of the uterus, the mucous membrane of the uterus becomes sometimes greatly more thickened than usual, and being, in accordance with the ordinary rule, thrown off, it is presented externally. This is what appears to take place in these cases of membranous dysmenorrhœa. The membrane in question is smooth internally, rough and slightly flocculent externally. When thrown off in a single piece, the membrane presents three apertures, corresponding to the apertures communicating with the uterine cavity, and is of a pyramidal shape. It is expelled during the catamenial flow, which, as a rule, is more profuse than usual. It is unlike the vaginal exfoliations just alluded to, being very much thicker. The distinction of this dysmenorrhœal membrane

* *On Leucorrhœa*, p. 57.

from the decidua of an early ovum might, under certain circumstances, be difficult, as already stated, viz. when the supposed decidua is unaccompanied by any part of the chorionic structure. The concomitant circumstances will assist in the diagnosis: thus the 'dysmenorrhœal membrane' is not expelled at one catamenial period only, but on successive occasions; whereas, in the case of an abortion, the same thing is not likely to recur, or, at all events, with the same marked periodicity. For further remarks on this subject, see 'Pain during Menstruation.'

3. *The Covering of the early Ovum.*—Portions of the decidua materna, the decidua reflexa, the chorionic sac, &c., may come away in the form of membranous substances. It is unnecessary here to repeat what has been already stated as to the diagnosis of the nature of these bodies.

4. *Exfoliations from the Bladder.*—The coats of the bladder have in rare instances been expelled: in a case related by Mr. Spencer Wells, the whole lining of the bladder appears to have sloughed and to have come away by the urethra.*

(C) VESICULAR BODIES.

The Hydatidiform or Vesicular Mole.—Little bladder-like substances, singly or connected in series like beads, may be expelled from the uterus. These bodies were formerly considered to be hydatids formed in the uterus. They really result from certain alterations of the chorion villi, and they are always the result of conception. The embryo perishes at an early period, and the chorion villi continuing connected with the uterus maintain a slow growth, the *development* being arrested. The vesicular bodies are thus the result of dropsical swelling of the chorion villi. It appears that the period of pregnancy during which the chorion villi may take on this peculiar form of degenerative growth is limited, probably not later than the middle or end of the third month. If the embryo perish after the chorion villi have become pretty intimately connected with the decidua serotina, but before the placenta has become formed, while the villi are allowed still to retain a certain degree of connection with the uterus, they may continue to grow; but *development* is arrested, and the bladder-like bodies are the result.†

* See *Obstetrical Trans.* vol. iv.

† For a more complete account of the arguments which are to be adduced in favour of the above explanation of the formation of these vesicular bodies than is here given, I would refer to my papers on the subject in vols. i. and ii. of the *Transactions of the Obstetrical Society of London*; also to a case published in the *Lancet*, vol. ii. 1862.

With the presence of the vesicular mole watery discharges are occasionally associated. The mole in question may attain a considerable size, and may remain several months in the uterus, a few of the bladders from time to time breaking and discharging fluid from the os uteri. The mass may come away altogether, or clusters of the vesicles may be expelled at intervals.

Connected with this subject is an important practical question, which I have in another place thus attempted to answer, viz.: ‘*Can a portion of retained placenta take on the hydatidiform change?*’ The placenta belonging to a mature foetus cannot, if ‘healthy at the period of the birth of the child, become the seat ‘of the hydatidiform change, the chorion villi having long since ‘disappeared and become converted into blood-vessels. The only ‘circumstances under which hydatidiform bodies might be subse- ‘quently expelled from the uterus, and give rise to the supposition ‘that they arose from degeneration of a retained placenta, are, as ‘I believe, the following:—Firstly, in cases of double conception, ‘when, one embryo having perished at an early period, the mem- ‘branes thereto belonging have undergone the hydatidiform dege- ‘neration, and are not expelled from the uterus together with the ‘normal placenta. In illustration of this position, a case may be ‘referred to, which was published some years since,* in which a hyda- ‘tidiform mass (in bulk about three pints) was expelled *together with* ‘a normal placenta. In this case, it is most probable that there ‘was a double conception; and if the remains of the diseased ovum ‘had not been expelled *with* the normal placenta, but some weeks ‘or months subsequently, the case would have come under the above ‘category. A *second* possible case is, that a portion of the chorion ‘villi may become separated organically from the foetus at an early ‘period, and may undergo the hydatidiform degeneration, whilst ‘the remainder may grow and nourish the foetus up to the full ‘time. . . . If the diseased portion were retained in the uterus, ‘the supposition before alluded to might arise.’ †

True hydatids may in very rare instances be expelled from the generative passages. They probably originate in the abdomen, bursting into this cavity from the liver; and they may possibly penetrate through the uterus, or into the vagina. True hydatids are closed sacs one within another; while the vesicular bodies resulting from chorionic transformation are arranged in a series like beads on a string, with slender peduncles or intervening

* *Lancet*, 1846, vol. i. p. 430.

† *Obstetrical Trans.* vol. i. p. 263.

connecting portions. The well-known 'hooklets' are usually found when the cysts are really of hydatid origin. I have met with a case in which, death having occurred, several hydatid cysts were found in the abdomen, the pelvis, &c., and, had life been prolonged, some of these might have burst into the vagina or uterus. In the case in question, the patient was a young unmarried woman.

(D) FACTITIOUS BODIES.

Lastly, the observer must be cautioned as to the occurrence of cases in which, for a variety of reasons, women exhibit substances which they are desirous of leading the practitioner to believe have been expelled from the vagina. The careful examination of the bodies in question is, or should be, sufficient always to enable us to detect the fraud.

CHAPTER V.

NON-SANGUINEOUS DISCHARGES.

Preliminary Remarks on the Objects of the Diagnosis, and the Data necessary for the purpose.

NORMAL CONDITION OF THE SECRETIONS OF THE GENERATIVE PASSAGES ; of the Vagina, the Cervix Uteri, and the Uterine Cavity, respectively.

WATERY DISCHARGES ; Various Causes and Conditions leading to their Production.

MUCOUS AND PURIFORM DISCHARGES.

SANIOUS DISCHARGES ; OFFENSIVE DISCHARGES.

CAUSES OF LEUCORRHOEA, Constitutional, Local, and Special, the latter including those of Syphilitic or Gonorrhoeal Origin.

THE diagnosis of the nature and causes of various kinds of discharges from the generative organs is a matter of the greatest possible importance. These discharges are in themselves often a very great inconvenience, and a great source of distress to the patient; and they are not seldom the outward and visible signs of grave and serious disease.

The subject requires to be considered with some attention, not only because the diagnosis is in itself important, but because it is also difficult. Not seldom it is found almost impossible to solve satisfactorily some of the questions which present themselves in practice, and which have reference to the special nature and source of a particular discharge.

The questions we have to determine in a given case are—

1. What is the source of the discharge? and 2. What is its cause?

The data with which we must be put in possession in order to answer these questions relate to—

1. The physical qualities of the discharge itself.
2. The circumstances attending or preceding its appearance.
3. The physical condition of the parts, the uterus, vagina, &c., from which the discharge may or does proceed.

The physical condition of the uterus, vagina, &c., can only be learnt by means of an examination. The latter method of obtaining information will be considered subsequently; but at present the object is to ascertain the diagnostic value of other

available data, viz. the physical characters of the discharge itself, and the circumstances attending its appearance. It not unfrequently happens that examinations cannot be had recourse to, and there are, besides, many cases in which it is desirable, for a variety of reasons, that an examination should be avoided.

Before enquiring into the nature and cause of the various abnormal discharges which proceed from the generative organs, it will be well to describe the characters of the secretions which are naturally formed within the generative passages.

THE NORMAL CONDITION OF THE SECRETIONS OF THE GENERATIVE PASSAGES.

In a state of health, there is poured out from the mucous membrane of the vagina, from the sebaceous and muciparous glands at the orifice of the vagina, from the vulvo-vaginal glands situated one at each side just within the orifice of the vagina, from the cervix uteri, from the whole of the mucous tract extending from the ostium vaginae to the termination of the Fallopian tubes, a secretion sufficient to lubricate the opposed surfaces of the mucous membrane. This secretion is liable to be physiologically increased in quantity, as during congress, and under other circumstances, and it is liable at any moment also to be increased in quantity pathologically, giving rise in the latter case to fluid or other discharges.

Diseased processes are generally exaggerations of the natural ones; and, to apply this in the present instance, we find that leucorrhœa, which is a term applied generally to discharges of the kind now under consideration, is, for the most part, the natural secretion increased in quantity. Hence, it is necessary, in the first place, to give a brief statement as to the nature and physical properties of the healthy secretions of the generative passages.

At the orifice of the vagina, we have *sebaceous follicles* scattered over the nymphæ, clitoris, and inner surface of the labia, the secretion of which contains butyric acid, and has a strong and somewhat ammoniacal odour.* Around and at the sides of the vaginal aperture, there are many *muciparous follicles* which secrete viscid mucus. Further, we have the vulvo-vaginal glands, which secrete a viscid fluid resembling somewhat the prostatic fluid, and having a peculiar odour. The secretions of these glands at the vaginal orifice are liable to considerable increase during venereal excitement.

Regarding the *vaginal mucous membrane*, it may be stated

* Farre, *Cycl. Anat. and Phys.* loc. cit.

that it secretes a fluid, at first transparent, acid, and mixed with large quantities of epithelial *débris*. This secretion usually appears at the outlet as a whitish-looking secretion, due, as pointed out by Sir C. M. Clarke, to the entanglement of air, just as the saliva forms a whitish accumulation at the corners of the mouth in individuals speaking rapidly. The more decidedly *curdled* aspect of this secretion occasionally observed appears to depend on the albumen being precipitated by the acid of the secretion. In the vaginal mucus there is frequently found, on examination by the microscope, a number of *trichomonata*, which are oval, shaped like a pear or biscuit, and are from six lines, to an inch and four lines, long. Respecting these animalcules, however, Scanzoni makes the remark that their presence is connected with a certain alteration of the product of the vaginal secretion, and that they do not develop much except in a mucus incontestably of pathological nature.

The mucous secretion of the *uterine cervical cavity* is of a very different character altogether. The glands of the uterine cervix, first accurately and thoroughly described by Dr. Tyler Smith,* are exceedingly numerous, and the apparatus there situated is, when in a state of activity, capable of producing an enormous amount of secretion. Hence the extreme importance of this part of the generative passages in all considerations having reference to the etiology and nature of leucorrhœa.

The secretion of the glands of the cervix uteri is not acid, but, as first shown by Dr. Whitehead, alkaline. It is, when seen issuing from the crypts of the mucous membrane, transparent, somewhat resembling the mucous secretions of the nasal passages, or white of egg, in appearance, but very tenacious and viscid; it contains many mucous corpuscles, and epithelium of the columnar variety is mixed up with it. The characters, as here described, are lost in the discharge as usually witnessed; after it has passed down the vaginal canal and become mixed with the secretions of the latter surface. The effect of the admixture of the secretions from the cervix and the vagina is that a white soapy or creamy fluid results. It now and then happens, however, that the cervical secretion escapes from the vagina in the form of masses of coagulated albumen. Ordinarily, and when the parts are in a condition of health, the secretion from the cervix is not probably considerable in quantity. The mucus lubricating the vaginal passages during labour proceeds chiefly from the cervix uteri.

* See his elaborate and original work, *On the Pathology and Treatment of Leucorrhœa*. London: Churchill. 1855.

Concerning the natural secretions of the *internal membrane of the body of the uterus* during the inter-menstrual periods, we know very little. With the history of the changes which take place during menstruation itself, we are even imperfectly acquainted. And, as a consequence of this, there is very little certainty as to the amount of secretion which this membrane contributes in cases of leucorrhœa. When the coloured discharge of menstruation is absent, it is often replaced by a colourless secretion alone, which appears externally, lasts a few days, and then disappears; and it is certainly rational to suppose that this colourless discharge coincident with the proper menstrual period proceeds from the same source as the ordinary menstrual fluid. Dr. Tyler Smith, however, maintains that under these circumstances the discharge observed proceeds from the glands of the cervix, and that these are really cases of 'periodical leucorrhœa.'

Lastly, respecting these secretions in a state of health, it must be stated that usually they are only sufficient in quantity to lubricate the parts; but that there are not a few instances in which the secretions are much more profuse, and yet without entitling the case to be considered altogether pathological. In some cases, the increase in quantity is purely physiological.

With these few remarks respecting the normal secretions of the generative passages, we may now proceed to the consideration of the subject more immediately before us, viz. the *diagnosis of non-sanguineous discharges from the generative passages*.

The more prominent physical characteristics of the various discharges to which we have now to direct attention, have been made the basis of a rough sort of classification. Thus, there are *watery* discharges, *mucous* discharges, *muco-puriform*, and *purulent* discharges. Then, we have discharges which occasionally assume a *sanious* character, in which there is an evident admixture of blood-elements. *Offensive* discharges also form a class the differential diagnosis of which may be usefully pointed out.

It will be convenient to discuss these several kinds of discharges *seriatim*, indicating as far as possible the characteristics which guide our decisions as to their nature, source, and cause.

WATERY DISCHARGES.

" Discharges from the vagina of a serous or watery character, more or less profuse in quantity, form a class which may be conveniently separated from the other varieties.

Pregnant women are sometimes the subjects of a discharge of a watery nature, the origin of which is, doubtless, the amnionic sac. The fluid may escape gradually, and the flow may be persistent for a longer or shorter time; or the quantity may be greater, but the duration of the same less. The discharge of a watery fluid may go on for some time, extending at intervals over a considerable portion of pregnancy, and it is not necessarily destructive to the life of the fœtus, which may yet be born at the full time and healthy. If the discharge of the fluid be accompanied by pains like those of labour, the supervention of a miscarriage is to be feared. In a case of watery discharge from this cause, the abdomen would be large, the uterus increased in size, and the signs of pregnancy would be present. The watery discharge, if in quantity, would have the effect of reducing the size of the uterine tumour.

There is another class of cases in which a watery discharge occurs from time to time, *i. e.* in cases where the uterus is occupied by the *hydatidiform* or *vesicular mole*—‘hydatid pregnancy,’ as it was formerly called. Patients believed to be pregnant increase too rapidly in size, foetal movements are not felt, the mammary symptoms are in abeyance, the whole aspect of the case being irregular, so to speak, and yet there are strong reasons for believing the woman originally to have been pregnant. After a time, slight losses of blood may occur, and slight but repeated discharges of watery fluid, which are generally accompanied by labour-like pains; or discharge of watery fluid alone is observed. The cause of the discharge is probably rupture of the cyst-like vesicles composing the chief part of the degenerated contents of the uterus; but it may be also due to expulsion from time to time of amnionic fluid. Respecting the appearances presented by the hydatidiform bodies themselves, which may be expelled together with the watery fluid, see p. 74.

Another cause of watery serous discharges from the vagina is found in the presence of that peculiar growth first described by Dr. Clarke under the name *caruliflorer excrescence*, but which is now known to be constituted by epithelial cancer. The fluid discharged in such cases is described in the work of Sir C. M. Clarke as ‘little more than a clear watery fluid; blood, however, is sometimes mixed with it, or perhaps comes away alone in large quantities.’* The quantity of fluid discharged is sometimes enormous. Dr. Ramsbotham records a case in which twenty dozen napkins were used in a week. Safford Lee describes the discharge

* *Op. cit.* vol. i. p. 34.

as brownish, like coloured saliva, and this description is very accurate. The symptoms of pregnancy are not, unless by a rare coincidence, present in such cases.

The presence of *polypi* within the uterus is occasionally the cause of profuse watery discharge. This fact has not been sufficiently dwelt upon by previous writers. Some cases related by Dr. Elkington of Birmingham afford well-marked instances in support of this statement.* I have observed this symptom to be present in a marked degree in three instances. Here discharges of a watery nature are observed alternately with sanguineous discharges, and profuse menstruation, together with other signs of polypus, is present. The more usual form of discharge attendant on uterine polypi is not, however, that now under consideration. In a case of polypus the size of an egg, hanging down into the vagina by a slender peduncle, and which I removed by means of the *écraseur*, there was rather profuse watery discharge, the other and more usual symptoms of polypus being wanting.

In a most interesting case related by Dr. Simpson,† an abundant serous, and sometimes offensive, discharge, which had existed for some time, was found to be due to the presence of a *fungous cancerous growth* within the uterine cavity. This is a form of disease of great rarity.

Tubercle of the Uterus.—In a case quite recently brought before the notice of the Obstetrical Society, by Mr. Tomlinson, there was a continuous profuse watery discharge, of a dirty yellow or pale brown colour, in a lady fifty-five years of age. The patient had suffered from this discharge for two years, and she died a little over a year later. The cause of the discharge, which persisted up to the time of her death, could not be made out during life; but after death the uterus was found to be the seat of tuberculosis to a marked extent.‡ This is a case of great rarity.

Sometimes an *ovarian cyst* becomes adherent to one of the Fallopian tubes, or, at all events, in some way becomes connected with it; the contents of the ovarian cyst pass into the Fallopian tube, thence into the uterus, and flow away gradually from the vagina. The signs present in such a case would be:—previous existence of a tumour situated in the hypogastrium, or more or less to one side, subsidence of the same, and occurrence of simultaneous watery or serous discharge from the vagina. This mode

* *Obstetrical Transactions*, vol. i.

† *Med. Times and Gaz.* Jan. 15, 1859.

‡ The details of this interesting case will doubtless appear in vol. v. of the *Obstetrical Transactions*.

of termination of an ovarian cyst is rare; Dr. West only noticed it in one out of sixty-eight cases.

Watery Discharge following Parturition.—In Dr. Ashwell's work* will be found related particulars of five cases in which a profuse watery discharge, coming away in gushes, was noticed some days after labour. In only one of the cases was opportunity afforded of ascertaining post mortem the condition of the uterus; in that case, 'three elevated masses, having a fungoid and melanotic appearance,' were found growing inwards from the uterine wall. Such cases are rare.

Sir C. M. Clarke refers to another cause of watery discharges from the vagina, the '*oozing excrescence of the labia*,' probably identical with what would be now termed chronic eczematous affection of the skin covering the parts in question, associated with a chronic inflammatory condition of the tissues beneath.

Lastly, it is just within the limits of possibility that the watery discharge present may be really an *involuntary escape of the urine* from the bladder, either caused by paralysis of the muscles surrounding the urethra, or due to vesico-vaginal fistula. The urinary odour present in such cases would almost certainly discover the nature of the case.

MUCOUS AND PURIFORM DISCHARGES.

The cases in which discharges having this character are observed form that large class of cases to which the term '*leucorrhœa*' is more usually applied. This group of cases differs from those just considered, not only in the physical characters of the discharge, but in regard to the manner of its appearance. Here the discharge is more or less completely continuous. The discharges now under discussion have this in common, that they are more or less opaque. The colour varies exceedingly; it may be whitish, decidedly yellow, yellowish-green, or of any intermediate shade. The consistence of the discharge also varies; it may be viscid, gelatinous, of the consistence of cream, or quite fluid.

Most cases of '*leucorrhœa*' are of a composite nature; that is to say, the discharge observed at the vaginal orifice proceeds from more than one source, and results from the mixing of secretions from the cervical mucous membrane, from the mucous membrane

* *On Diseases of Women*, p. 507.

lining the vagina, and, in certain cases, also from the interior of the body of the uterus itself.

In most cases, there is a preponderance of secretion from one or other of the sources indicated. The difference in the source of the discharge has been made the basis of a division of cases of leucorrhœa into 'uterine' and 'vaginal;' the former including cases in which the discharge proceeds chiefly from the uterus (the cavity of the cervix), and the latter including those cases in which the discharge has a vaginal origin.

Certain general deductions may be drawn from the character of the discharge as to the origin of the same. These may be stated as follows:—

If the discharge consist of a curdy-looking fluid, of an acid reaction, and containing in suspension tessellated epithelium *débris* in quantity, it more generally happens that it proceeds from the mucous membrane of the vagina.

If the discharge consist of a soapy-looking matter, or of vitreous lumps of coagulated mucus, or of viscid tenacious mucus, the origin of the same is the cervix uteri. It is only in cases where the cervical glands are in a very active condition that products of this kind are seen externally in any considerable quantity.

If the discharge be of a creamy character, tolerably profuse, and constant, it probably proceeds from the cervix uteri, and possibly from the cavity of the body of the uterus also. It is the secretion of the cervix, altered and made creamy by the action of the vaginal secretions.

The words 'puriform' and 'creamy' are here used almost synonymously. The outward physical characters of a 'puriform' discharge and of a 'purulent' discharge are not very different, and hence the two are frequently confounded. It is most important, however, that always theoretically, and whenever possible practically also, a distinction be drawn between the presence of actual pus and of a fluid which only resembles it. Neglect of this rule has introduced great confusion into the subject.

Between discharges which are essentially mucous in their outward characters, and discharges which are decidedly purulent, we have all gradations; and it not rarely happens that it is difficult to say whether the discharge present would be more properly termed 'muco-puriform' or 'purulent.' Further, it may happen that there is an admixture of the two, actual pus discharged from some portion of the generative surface being mixed up with mucous altered secretion: this would render the distinction still more difficult.

It is thus evident that, from the physical characters of the discharge alone, we cannot obtain in all cases positive information as to the precise spot from which it is poured out. Where circumstances render it necessary that more exact information be obtained, an examination must be resorted to.

PURULENT DISCHARGES.

There are two important distinctions to be made in reference to this class of discharges. Thus, those cases in which the discharge is *continuous* belong to one category; those in which the discharge is *non-continuous*, taking place for a certain time only, and recurring after a shorter or longer interval, belong to another.

a. When the purulent discharge is *continuous*, the origin of the discharge is probably the vaginal mucous membrane, the uterine cervical glands, the surface of a cancerous or other ulcer, suppuration of retained membranes or placenta after abortion, &c. Respecting the participation of the cavity of the uterus itself in cases of profuse purulent 'leucorrhœa' of the more ordinary kind, opinions are divided. An important class of cases, in which there is continuous discharge, are those in which the purulent discharge is the result of *gonorrhœal* infection. The diagnosis of gonorrhœa from other forms of purulent leucorrhœa will be considered further on.

b. *Non-continuous Purulent Discharge.*—In the other class of cases—those in which there is a purulent discharge only lasting for a time, ceasing, and then recurring—the source of the discharge is either the uterine cavity itself, or an abscess situated near the vagina, and opening into that canal. There is reason to believe that purulent discharge, whether continuous or non-continuous, does more often than has been supposed proceed from the cavity of the body of the uterus; and we occasionally have positive evidence of its origin in this position in cases where, either from contraction of the uterine canal at the junction of the body and cervix (produced by senile atrophy, flexion of the uterus, &c.), an accumulation takes place within the body of the uterus, and in which the symptom we are now considering—occasional and abrupt discharge of purulent fluid from the generative passages—is observed. Sir C. M. Clarke and Dr. Ashwell both allude to a form of purulent discharge produced, as they describe, by formation and retention of pus in the uterine cavity, the pus so formed

escaping from time to time in the manner just described. In a case of Dr. Ashwell's, the purulent fluid expelled amounted to nearly half a pint on two or three occasions. Profuse discharge of pus from suppuration of a polypus of the uterus has been noticed (Safford Lee). Dr. Matthews Duncan* has more recently called attention to such an occurrence, particularly in the case of old women who have ceased to menstruate. In a woman who is still menstruating, the symptoms are, dysmenorrhœa, a peculiar feeling of tightness round the loins, sickness or vomiting, &c.; these symptoms finding sudden relief in the discharge of a certain quantity of purulent fluid. If menstruation have ceased, the symptoms slightly vary.

One of the most important causes of this occasional purulent discharge is *pelvic abscess*. The abscess may follow after, or be the result of, parturition; in which case, the other signs present would lead to a suspicion as to the origin of the purulent discharge in question. Another highly interesting class of cases is that in which an abscess, the result of suppuration of the contents of the cyst of a peri-uterine hæmatocele, discharges its contents into the vagina. In both these classes of cases, however, the discharge appears suddenly, and such cases markedly differ in this respect from ordinary cases of purulent leucorrhœa.

SANIOUS DISCHARGES

from the generative passages are not unfrequently the subject of observation; that is to say, there is a discharge of a reddish tinge, and evidently containing a certain admixture of blood-elements. In women the subjects of profuse menstruation, as the discharge of blood is becoming less, there is generally to be observed a period when there is sanious discharge. The presence of a sero-sanguineous discharge is believed by Dr. Bennet to be indicative of inflammation of the lining membrane of the uterus—internal metritis. Where an hypertrophied (so-called ulcerated) condition of the villi lining the cervix is present, slight bleeding readily occurs, and gives rise to a sanious discharge. Sanious discharges are not unfrequently found to be due to the presence of morbid growths within, or organic disease of, the uterus, malignant ulceration of the os uteri, &c.; and we find, combined, leucorrhœa and very slight but continuous hæmor-

* *Edinburgh Medical Journal*, March, 1860.

rhage. In polypus of the uterus, such sanious discharge, alternating with hæmorrhages or with colourless leucorrhœal discharge, is observed. Whatever, in fact, is capable of giving rise to hæmorrhage may occasion discharge of a sanious character. In cases of pelvic hæmatocele, where an opening has formed between the cyst and the vagina, and the contents are in process of evacuation, there will be a sanious discharge. The presence of a more or less continuous sanious discharge is a condition of things requiring a careful digital examination.

OFFENSIVE DISCHARGE.

This quality of the discharge is important in reference to the determination of the disease present in certain cases; but it is one on which too much reliance must not be placed, or serious mistakes may be made. Discharges of an offensive character have been usually considered as absolutely indicative of the existence of *cancer*. Now, it is true that, in almost all cases of cancer of the uterus, there is to be remarked a particularly offensive odour of the discharge proceeding from the vagina; but it is also true that it may be absent. In cases of profuse purulent leucorrhœa accompanied by hectic and a generally low state of the constitutional powers, the discharge, when retained in the vagina for any time, is apt, as has been remarked by Dr. Tyler Smith, to become offensive, particularly if the retention of the discharge be favoured by a contracted state of the ostium vaginæ.* The offensive nature of the discharge is so often looked upon as a material point in the diagnosis of cancer uteri, that a good deal of practical importance attaches to this observation. The smell of cancerous discharge is peculiar: there is not simply fœtor, but fœtor of a peculiar quality. In fact, the smell is so peculiar that it can hardly be mistaken for anything else, according to some authorities. It is certain, however, that the peculiarity is not equally appreciable by different observers; and the absence of this peculiar fœtid odour, or indeed the absence of fœtor of any kind, does not shut out the possibility of the presence of cancer. This fact cannot be too much insisted on, for there are records of cases in which disastrous results have followed the belief on the part of the practitioner that cancer of the uterus was necessarily associated with presence of a fœtid discharge. The later the

* *On Leucorrhœa*, p. 93.

stage of the cancerous discharge, the more constant is the fœtor, the ulcerative process appearing to be generally associated with it. There may be fœtor, it must not be forgotten, in any of the diseases of the uterine organs in which hæmorrhage is present, if cleanliness be not observed; clots of blood retained and decomposing are especially liable to give rise to it. The presence of a dirty brownish or bloody-looking discharge in a patient previously the subject of hæmorrhages, and within the 'cancerous' age, would make us suspicious of the existence of cancer; add to this the offensive character of the discharge, as just described, the suspicion would be still stronger. The actual decision could not, however, be arrived at without a physical examination.

Another cause of offensive discharge from the vagina is the *presence of a dead ovum or portions of the fetal membranes, &c., in the uterus*. It is more generally connected with retention of the whole or portions of the *placenta*. The previous existence of pregnancy and the occurrence of delivery would point out the nature of the case. In a case which fell under my own observation, the presence of a fœtid discharge was connected with retroversion of the gravid uterus, and consequent (apparently so, at least) sloughing of the decidua uterina. Offensive discharges in women *during the puerperal state* are so obviously connected therewith, that the relation of the two things as cause and effect could hardly escape recognition.

It sometimes happens that the discharges from the vagina are offensive without any obvious cause. Thus cases have been observed in which the discharge at the menstrual period was offensive, and preceded or followed by leucorrhœa having the same character. In such cases, a careful examination of the condition of the uterus would be necessary in order to discover the hidden source of the mischief.

Want of cleanliness is occasionally connected with the presence of an unpleasant odour of the discharges from the generative organs. When the sebaceous follicles situated at the entrance of the vagina secrete copiously, this phenomenon may be observed.

Among the physical qualities of discharges from the vagina, *their effects on the surface of the body with which they come into contact* have to be considered. Some discharges from the vagina are quite devoid of irritating properties; but the reverse is often observed. Irritating effects, such as redness, excoriation attended with smarting pain of the skin of the inner side of the thighs and the external genitals, are common in connection with excessive vaginal secretion, however produced; the constant contact with

the vaginal secretion, often in a state of hyper-acidity, produces this result. Another class of cases in which excoriations of the same parts are frequently seen, are those attended with a caustic irritating discharge from the ulcerating surface of a cancerous disease of the cervix uteri. Again, *sypilitic* sores may spread and produce others in the immediate neighbourhood; and we take advantage of the knowledge of this fact for purposes of diagnosis, when we inoculate the skin of the thigh with discharge from a sore on the labia, or on the vaginal wall, which we suspect to be of venereal character.

CAUSES OF NON-SANGUINEOUS DISCHARGES.

The conditions giving rise to the occurrence of 'watery' discharges, which discharges form a class by themselves, have been already considered. The observations to be now made apply to the more ordinary cases in which the discharge is mucous, mucopuriform, purulent, sanious, &c.

It is important to bear in mind that 'leucorrhœa,' under which term are included the various kinds of discharges just mentioned, is to be regarded (using a simile of Dr. Rigby's) as symptomatic of disease or derangement of the generative organs, just as cough and expectoration are symptomatic of affections of the respiratory apparatus. It is necessary, then, to look beyond the mere symptom, and endeavour to detect the condition which gives rise to it.

The causes of leucorrhœa, between which we have in a given case to distinguish, may be divided into two classes—*constitutional* and *local*—not always easily separable, for the reason that both kinds of causes are often present in the same case. The chief causes of leucorrhœa will be now briefly considered under these two heads.

CONSTITUTIONAL OR GENERAL CAUSES.

The first of these is *climate*. In warm countries, leucorrhœa is more common than elsewhere, and coexists with a great tendency to menorrhagia, which indeed, in common with the leucorrhœa, arises in great measure from deficient tonicities of the uterine vessels, frequently the forerunner of serious uterine disease. Moist and damp situations appear to have a similar effect: thus the inhabitants of Holland, Belgium, and the fenny districts of England, are said to be peculiarly liable to leucorrhœa.

A state of *plethora* is capable of giving rise to leucorrhœa, the discharge being in such a case a kind of relief to the overcharged system. Women who live too well and take but little exercise suffer in this way. When the opposite state of things is present, and the system is reduced, by losses of blood or defective nutrition, to a condition of *anæmia*, leucorrhœa may be one of the results observed. Whether in the case of a plethoric or an anæmic patient, leucorrhœa may occur irrespectively of child-bearing. It very frequently happens, however, that the influence of *child-bearing* is very considerable in causing leucorrhœa, particularly in anæmic individuals. The effect of child-bearing is twofold. Women of weakly constitution, whose blood is thin and watery, frequently suffer to a very troublesome extent from leucorrhœa during the period of pregnancy; after pregnancy has ended, the increased action of the various glands connected with the generative organs continues, the effect of which is persistence of the leucorrhœa. The congested condition of the generative organs left behind after pregnancy is the cause of the leucorrhœa in many cases. Many cases of leucorrhœa have their origin in a congested or chronic inflammatory condition of the uterus, the consequence of abortions, as well as following delivery at the full time. In such cases, leucorrhœa is associated with profuse menstruation and other sexual disturbances; and in the end the patient becomes the subject of a nearly constant discharge from the vagina. In women who have borne children in quick succession, or who have had abortions, and who have been for some time the subjects of leucorrhœa, the uterus becomes seriously altered in texture, in size, and in shape; and this may be associated with an anæmic condition generally. Here, as in most cases, we perceive the difficulty of drawing fine distinctions: the constitutional merges into the local cause, and *vice versâ*.

In individuals of *phthisical tendency*, leucorrhœa is more apt to arise in connection with child-bearing; and in such persons, indeed, very frequently independently of it. In some cases, *over-lactation*, by inducing a state of extreme debility, appears to produce leucorrhœa, often in a very extreme degree of profuseness.

The relations of *menstrual disorder* and leucorrhœa as cause and effect require a word or two. Leucorrhœa is often present in individuals in whom menstruation is absent; and Dr. Tyler Smith considers the leucorrhœa as vicarious of the menstrual secretion in such cases. It is questionable how far this view of the case is correct. It appears more rational to suppose that both the leucorrhœa and

the menstrual deficiency are due to derangement of some one or other of the vital processes. Thus the individual is rendered weak by over-lactation or some other debilitating agency; the menstrual secretion becomes less and less healthy, and less sanguineous in character; she becomes affected with leucorrhœa; the leucorrhœa is naturally more profuse at the menstrual period, when the generative organs are in a state of engorgement, than at other times; and the condition of things arises described by Dr. Tyler Smith * as 'leucorrhœa vicarious of menstruation.'

Chronic disease of the lungs, especially *emphysema* and *valvular affections of the heart*, are often observed in association with chronic leucorrhœa, which is, under such circumstances, difficult to cure.

There are some general observations which apply to all these cases in which leucorrhœal discharge arises from a constitutional or general cause—that, as a rule, symptoms which are usually associated more particularly with actual pathological changes in the uterus, such as pain, tenderness, &c., are, at all events at first, absent. Further, the quantity of the discharge is not very considerable, unless there be some local reason for it; and lastly, the discharge itself, when produced by purely constitutional causes, is less liable to become offensive or sanious than in cases where there is some actual lesion of the generative organs present.

When leucorrhœa is present, associated with any general defective condition of the bodily health, it may be taken for granted that, if the leucorrhœa be not absolutely dependent thereon (a relation which is found to subsist in many cases), it is, at all events, aggravated and rendered persistent thereby; and there could be offered no more striking proof of the truth of this statement than that which is found in the fact that a purely constitutional treatment is capable of effecting so much in the way of cure in those cases where the leucorrhœa is chiefly dependent on local disorder.

LOCAL CAUSES OF LEUCORRHOEA.

These are very numerous. Any irritation and almost any disease of the generative organs may be associated with a leucorrhœal discharge.

Concerning the distinction between the very numerous local conditions causing leucorrhœal discharge, it is to be observed that the diagnosis is generally impossible without a vaginal examination; and when, therefore, the cause of the discharge is not

* *On Leucorrhœa.*

evidently a constitutional one, this examination should be made. The deductions to be drawn from such a vaginal examination will be described in their proper place.

It may, however, be well to enumerate the chief of these local causes of leucorrhœa:—*chronic congestion of the uterus; chronic inflammation of the cervix uteri; irritation produced by excessive sexual intercourse; masturbation; general catarrhal inflammation of the vaginal canal; growths in the generative passages, or exercising an irritating influence external to them, such as polypus uteri, fibroid tumours of the uterus, hypertrophy of the cervix or of the uterus itself, cancer of the uterus; dislocations or distortions of the uterus—as flexions, retro- and ante-version; prolapsus (usually associated with hypertrophy) and inversion of the uterus; prolapsus of the bladder or vagina.* Inveterate mucous discharges are sometimes found to be due to presence of *minute vesicular polypi* growing within the cavity of the uterus.

But it is not necessary that the actual irritating cause be situate in the generative canal: we find many cases in which irritation or disease in the neighbouring organs is the cause of the leucorrhœa. *Ascarides in the rectum* are frequently found, particularly in young children, to produce leucorrhœa. In such cases, the ascarides may travel from the rectum to the vagina. *Hæmorrhoids* have often a like result. What is true of the rectum is also true of the *urinary bladder*, disease of which (as *calculus, catarrh, &c.*) is usually associated with presence of leucorrhœal discharges. *Vascular tumour of the meatus urinarius* may also produce leucorrhœa.

There are certain *special* irritating agents which, applied locally, are capable of producing a discharge of a leucorrhœal nature, viz. the virus of syphilis and of gonorrhœa. Concerning the discharges produced by these agents, some special remarks must be made presently.

The exact relations of the symptom 'leucorrhœa' to the various local conditions and derangements here cursorily mentioned cannot, as before remarked, be dwelt upon at any length. The symptom is one which is indicative of some disturbance of the natural balance; but neither the degree of intensity of the leucorrhœa, its quantity, nor its physical qualities, give us definite information as to the particular cause. Many women suffer from leucorrhœa for years, without thinking it necessary to consult their medical advisers with the view of procuring relief; and practitioners themselves differ in respect to the importance they attach

to it, some satisfying themselves with a knowledge of the fact that there is 'leucorrhœa,' others pursuing the investigation further. It is necessary, in attempting to arrive at the diagnosis of the cause, to consider the attendant circumstances. If the discharge be trifling in amount, and there be no particular disturbance of the general health, a minute investigation of the case, to the extent at least of actual manual or other examination, seems hardly necessary. Particular cases, however, unquestionably require particular decisions as to this point. Some cases require rather care in the investigation of the general facts and attendant circumstances; others demand more imperatively careful manual or visual examination.

The diagnosis of *syphilitic* and of *gonorrhœal leucorrhœa* possesses so great an amount of interest practically, and the difficulty encountered in determining the presence or absence of these conditions is often so considerable, that it is necessary to devote a short space to the separate consideration of this subject. The difficulty is increased by the fact that the pathology of these affections is still in so unsettled a condition, observers being by no means agreed as to what is to be called gonorrhœa, and what syphilis. Thus Dr. Whitehead considers that the uterus, in cases of gonorrhœa, is more affected than the vagina; by others the vagina is considered to be the proper seat of the affection. Dr. Tyler Smith believes that many of the cases set down by Dr. Whitehead as cases of gonorrhœal leucorrhœa were cases in which the leucorrhœa was of syphilitic origin.

There appears unquestionably to be a *syphilitic leucorrhœa*; but the difficulty is to distinguish it from the more simple form. It may be considered as probable that it is present when the leucorrhœa has been present for some time, associated with frequent previous abortions or birth of dead children; when secondary syphilitic affections of the throat, skin, bones, &c., are present; but above all, when it appears to be influenced by the administration of anti-syphilitic remedies. Further, the state of the glands in the groin is important. These become enlarged and indurated when syphilitic leucorrhœa is present, but do not suppurate; when there is suppuration, it must be considered as indicating the improbability that the individual is the subject of syphilis, or that she is likely to present secondary symptoms. It must not be forgotten that the glands in the groin may suppurate in scrofulous individuals who, it may be, are also affected with genuine syphilis. On external or internal examination, condylomata, ulcerations, or other characteristic evidences of syphilis, may be observed.

The discharge from the vagina is said to be often very great in quantity in these cases, to be yellowish in colour, and to contain much mucus. On these latter characters little absolute reliance can be placed for purposes of diagnosis.

In reference to the diagnosis of supposed *gonorrhœa*, it has always been found very difficult to substantiate the presence of the virus in the female subject, for the reason that the discharge arising from gonorrhœa and that of ordinary leucorrhœa are very much alike. Gonorrhœa in the female is, in its worst form, an intense vaginitis, the discharge being made up of epithelial plasma and purulent matter; more frequently it is a vulvitis, the inflammatory action being limited to the mucous surfaces at the vulva. The meatus urinarius very frequently participates in the discharge and irritation in cases of gonorrhœa. The collateral facts relating to the coming on of the attack are characteristic: the attack begins somewhat suddenly; there are heat, pain, and burning along the course of the urethra, all intensified and increased during micturition; there is usually also a discharge from the urethra. When the gonorrhœal discharge has become chronic, the urinary irritation may have become so much lessened in degree as not to attract attention unless enquired after. If the presence of a discharge from the urethra can be made out, it will very materially assist the diagnosis. Sir C. M. Clarke thought the diagnosis of gonorrhœa impossible; and it must be confessed that this is very often found to be the case. A method of observation by which the diagnosis is often much assisted, consists in ascertaining the effect of sexual intercourse in suspected cases: only it is liable to this source of fallacy, that a discharge in one sex producing a discharge in the other does not prove that the infecting individual is the subject of gonorrhœa; for it is a pretty well authenticated fact that an apparently simple discharge in the male may give rise to a discharge in the female, and *vice versa*. Cases in which these points rise up for determination require the exercise of great caution and careful investigation before giving an opinion. A case of spurious balanitis in the male, contracted by intercourse, may, it is said, be distinguished from a case of gonorrhœa by the fact that the symptoms of the former affection come on a few hours only after intercourse, whereas in gonorrhœa there is a period of incubation of from four to fourteen days, attended with chordee.*

It is impossible for the practitioner to exercise too great caution

* See case by Mr. Nunn, quoted by Dr. Tyler Smith in his work *On Leucorrhœa*, p. 129.

in pronouncing an opinion for or against the specific nature of a discharge from the female generative organs. In the words of the late Dr. Ashwell, 'it is always his duty to cure the disease, but rarely to venture upon an exposition of its nature. If he can positively affirm that it is of simple origin, let him do so, if suspicion has been aroused; if not, it is better to avoid any distinct allusion to the matter.' *

DISCHARGES FROM THE VAGINA IN YOUNG CHILDREN.—Remarks concerning this very interesting class of cases will be found under the head 'Examination of the External Generative Organs.' The diagnosis of these cases is exceedingly important, especially from a medico-legal point of view.

* *Diseases of Women*, p. 175.

CHAPTER VI.

DISORDERS OF MICTURITION.

MICTURITION POSSIBLE.—(A) Micturition Difficult—(B) Micturition Painful—(c) Frequent Micturition—(D) Involuntary Micturition.—Various Conditions which may give rise to these Symptoms.

MICTURITION NOT POSSIBLE.—Retention and Suppression of Urine; the Diagnosis of these Conditions, and of their Causes.

THE class of symptoms now to be considered—the disorders and derangements of the function of micturition—are of considerable interest from a diagnostic point of view. These disorders are frequently the occasion of great suffering to the patient; they owe their origin to a great variety of causes, the discrimination of which is not always easy, and hence the necessity for a close study of their diagnosis.

For diagnostic purposes, it will be convenient to divide the derangements of the function of micturition into two classes: 1. Those in which the patient is able more or less completely to evacuate the contents of the bladder; and 2. Those in which, the patient being unassisted, micturition is impossible.

1. MICTURITION IS POSSIBLE.

But it may be difficult, or painful, or frequent, or involuntary.

Frequency is a symptom which, although it generally accompanies difficult or painful micturition, may be usefully considered by itself. Involuntary micturition is naturally divided from the other varieties. Micturition may then be abnormal, because it is *a.* difficult, *b.* painful, *c.* frequent, and *d.* involuntary.

It must be admitted that this basis of division is artificial and open to criticism; but it will serve the purpose of enabling us to consider the subject practically. We do not often meet with cases in which micturition is simply difficult, or with cases in which the only thing complained of is pain attending micturition—the pain and the difficulty, indeed, frequently go together. Cases will, never-

theless, arrange themselves naturally under the one or the other head, according to the prominence of one or the other symptom.

(A) MICTURITION POSSIBLE, BUT DIFFICULT (DYSURIA).

It is frequently not easy to ascertain from the patient whether micturition is actually difficult or not, from the circumstance that pain is so readily confounded with difficulty, and *vice versâ*. The distinction is, however, an important one, and should always be made if possible.

Difficulty in micturition proceeds from one of two causes: either the bladder is incapable of expelling its contents; or, the bladder being equal to the task, the exit of urine is prevented by some abnormal condition of the urethra.

The *bladder is inefficient* when its muscular fibres are paralysed, or, which amounts to the same thing, when they do not act. *Paralysis of the walls of the bladder*, in this sense of the term, is not a common affection; it is witnessed in the last stage of low fever—in puerperal fever, *e. g.*—and it may be the result of long-continued distension of the viscus, whereby the muscular fibres have their contractility destroyed or lessened, as during parturition.

The cause of the difficult micturition in cases of this kind would be tolerably apparent, except when the paralysis extended to the sphincter also, when the constant dribbling away of urine would render the distended condition of the bladder less obvious. Cases of a more chronic nature sometimes present themselves: the bladder is largely distended, simulating abdominal tumour, and yet, the escape of urine being tolerably regular, attention is not called to the condition of the bladder itself. Lamentable results have followed under such circumstances from the want of a correct diagnosis. In cases of paraplegia, there is paralysis of the walls of the bladder, which, however, is more often present towards the close of the affection, the paralysis at first extending, in a marked degree, only to the sphincter. Cases of paralysis of the bladder are characterised by the offensive condition of the urine, due chiefly to partial constant retention of the secretion within this organ.

In cases of *organic disease of the bladder—cancer, e. g.*—there is frequently difficult micturition accompanied with bloody urine; micturition is also both frequent and painful.

In another more rare disease of the bladder, *viz. polypus*, the urine may be prevented escaping into the urethra, owing to the

mechanical interference of the growth in question (see 'Examination of External Generative Organs').

The bladder being healthy, the difficulty in micturition arises from some morbid or unusual condition of the *outlet* of the bladder.

Organic stricture of the female urethra occurs very rarely, compared with what is observed in the other sex. In males, difficult micturition is generally dependent on stricture of the canal itself; in women, very rarely. When present, it is generally traceable to the effects of mechanical injury, as from the pressure of the foetal head, contusions from instruments during labour, accidental injuries from without, contraction following syphilitic ulceration, or to chronic inflammation associated with gonorrhœa. In the elaborate work on stricture of the urethra, by my valued friend Mr. Henry Thompson,* will be found an account of the few cases of stricture of the female urethra which have been placed on record by others or observed by himself. Mr. Thompson confirms the observation of previous authors that the obstruction is usually met with close to the external orifice of the urethral canal. It may affect the canal for a variable distance. In cases where the difficult micturition is due to this cause, the difficulty is more or less persistent, though liable to exacerbations; the bladder is evacuated slowly, the stream is small, pain is at times present, and the difficulty, as a rule, slowly increases as time advances. The history of the case might be of some assistance in the diagnosis; but an examination would be necessary to verify the conclusions formed.

Vascular tumour of the urethra, or polypus of the urethra, may be the cause of difficult micturition; but micturition is, as a rule, more painful than difficult in the former of these affections. In the case of polypus of the urethra, there is difficulty and straining in micturition, and there may be occasional passing of blood.

Cysts or other tumours of the vagina, if growing near the urethra or neck of the bladder, may produce difficult micturition.

Inversion of the Bladder.—This rare condition will be mentioned further on, in connection with 'painful' micturition, but it also occasions 'difficulty.'

In a large number of cases of difficult micturition, the outlet is itself in a normal condition; but the canal is either subjected to pressure, or so dislocated from its normal situation that the urine passes through it with extreme difficulty. Connected as the neck of the bladder is with the uterus, dislocations of the latter involve

* *The Pathology and Treatment of Stricture of the Urethra*. The Jacksonian Prize for the year 1852. London: Churchill. 2nd ed. pp. 379 *et sequent*.

a certain amount of displacement of the former. *Retroflexion or retroversion of the uterus*, and especially of the *gravid uterus*, produces difficult micturition in a marked degree. The bladder is emptied with great difficulty in such cases; the urethra is thrust upwards behind the pubis, elongated, stretched, and pressed upon posteriorly by the uterine tumour. In early pregnancy, difficult micturition, persisting for some time and increasing, would lead us to suspect retroflexion or retroversion to be present. This is, as Dr. Churchill remarks, an important fact, for in order to treat these cases satisfactorily, the early recognition of their true nature is necessary. The other signs of retroversion of the gravid uterus are, flattening of the hypogastric region, involuntary straining or tenesmus, dragging in the loins and groins, constipation, &c.

Enlargement of the uterus, from the presence of *fibrous or other tumours*, may also produce difficult micturition; indeed, this symptom is very commonly observed in the early stage of this affection. 'A difficulty in making water,' says Sir C. M. Clarke, 'is a much earlier symptom attending the disease than a difficulty of passing the feces.'* In such cases, the difficulty is not so considerable as in retroflexion of the uterus, and the symptom is, so to speak, more chronic than acute.

In cases of fibrous tumour of the uterus, a curious phenomenon is sometimes observed, not, probably, peculiar to these tumours, namely, the manner in which ability to evacuate the bladder is affected by the position of the body. Thus, a lady who recently consulted me has had a large fibrous tumour of the uterus for the last seven years; of late there has been occasional difficulty in micturition, which she has always been able to overcome by lying flat on the face. The uterine tumour is moveable, and when the patient throws the body forwards the pressure of the uterine tumour is removed from the vesical outlet. Sir C. M. Clarke records a case in which the patient was capable of voiding small quantities occasionally if she lay on the back with the pelvis a little raised.†

During the descent of the fœtal head through the pelvis in labour, there is difficult micturition, the canal of the urethra being partially or completely occluded by pressure.

In *prolapsus of the bladder* (cystocele) the same symptom is observed; the position of the urethra is here precisely the opposite to that in retroflexion of the uterus, the canal being bent down-

* *Op. cit.* p. 254.

† *Ibid.*

wards instead of upwards. In these cases of cystocele the patient evacuates the bladder by simply pushing the tumour upwards; this restores the urethral canal nearly to its normal position.

Tumours of the ovaries, as long as they remain in the pelvis, frequently occasion great difficulty in micturition; when, in process of growth, they rise above the pelvic brim, the pressure on the urethra is removed, and, so far as the symptom now alluded to is concerned, the patient improves.

In short, difficult micturition may be caused by any tumour in the pelvis capable of exerting pressure on the canal through which the contents of the bladder are evacuated. It is characteristic of most of those cases in which the difficulty of micturition depends on pressure by tumours, &c., within the pelvis, that the difficulty is more or less chronic, and will be found on enquiry to have lasted for some time, unless in cases where the pelvic tumour is of very rapid growth. An instance of the latter exceptional kind we have in cases of *peri-uterine hæmatocele*, where blood rapidly effused in the neighbourhood of the uterus forms a considerable tumour, and, in consequence, gives rise to difficult micturition.

(B) MICTURITION IS PAINFUL.

In the series of cases now to be considered, pain, during or in consequence of micturition, is the prominent symptom. There may be difficulty; but the pain attending it is the circumstance chiefly attracting attention. What is considered by the patient to be 'difficulty' is often, on a more particular enquiry, found to be really 'pain.'

Micturition may be painful by reason of *abnormal conditions of the urine itself, of the bladder, of the urethra, of the vaginal mucous membrane*, or in consequence of *dislocations* produced by affections of other adjacent organs.

Urine.—The morbid conditions of the urine alluded to are undue acidity or alkalinity, presence of gravel, mixture of the urine with blood, in cases of Bright's disease, in cases of calculus of the kidney, cancer of the bladder, or from any other cause. If the urine be of an irritating quality, it often produces excoriation of the vaginal outlet.

Bladder.—Cystitis, chronic or acute, is accompanied with pain during micturition, and there is often a great degree of frequency present at the same time. In these cases of cystitis, pain is present more or less constantly, as well as during the passage of the urine

from the bladder. Cystitis itself may arise from the presence of a stone in the bladder, or from partial or complete retention of urine. In cases of calculus, there is pain on motion and at variable times; the pain during micturition is not considerable, as a rule, but there is generally pain just at the end of the process. The painful micturition in cystitis depends either on the condition of the urine, which is often very irritating, or on the associated inflammation of the urethra.

In *malignant disease of the bladder*, the pain following micturition is a marked symptom, but it is associated with pain at other times also, with frequency of micturition, with turbidity of the urine, occasional presence of blood, &c. The disease in question is rare; the affection with which it would be most liable to be confounded is organic disease of the kidneys. To settle the point, an examination of the bladder would be necessary.

Urethra.—Painful micturition is, in the majority of cases, dependent on morbid conditions of the urethra. In urethritis, whether of specific character or not, there is pain of a burning character (scalding, as it has been appropriately termed), which is more or less constant; but during the passage of the urine it is very intense. Micturition is not only painful, but very frequent. The suddenness of such an attack is, as a rule, characteristic of the presence of an inflammatory condition of the urethra. The symptoms present in inflammation of the urethra of a specific nature, *i. e.* produced by the gonorrhœal virus, are not, however, always characteristic. There is generally great pain in micturition; this pain is of a burning character, and associated often with a spasmodic contracted state of the sphincter, to which the pain experienced is partly attributable. The presence of an urethral discharge, and the moral evidence attainable, would assist us in coming to a conclusion. In cases of gonorrhœal inflammation of the urethra, the stage of acutely painful micturition does not extend usually beyond two or three days; it attends the outset of the inflammation, but is less marked subsequently. We also find inflammatory conditions of the urethra as the result of mechanical injury, as from masturbation, too frequent or violent sexual intercourse; or the inflammation may be the result of vesical irritation, as in cystitis or calculus.

An obstinate form of chronic urethritis, unconnected with gonorrhœa, has been noticed by Dr. Ashwell and Dr. McClintock, giving rise amongst other symptoms to painful and very frequent micturition. There is pain also irrespective of micturition, and

pain is produced by passing a catheter. The condition appears to be a chronic inflammation of the mucous membrane lining the whole of the canal.

Vascular tumour of the meatus is associated with more or less pain in micturition; and the pain present in such cases is, as a rule, very severe, the distress and inconvenience produced being so considerable that the patient dreads the process of evacuating the bladder. Painful micturition, extending over a considerable time, in a middle-aged woman, should lead us to suspect the presence of this affection. Examination of the meatus would then be necessary. In children, *eversion of the mucous membrane of the urethra, or inversion of the bladder itself*, is in some rare instances a cause of difficulty and pain in micturition.

Another class of cases of painful micturition are those in which the bladder and urethra are unaffected, but, the *ostium vaginæ* being in an inflamed condition, the passage of urine is productive of pain from the contact of the latter with the inflamed surface. Certain forms of leucorrhœa are associated with painful micturition, in consequence of the existence of this inflammatory condition of the outlet of the vagina. When the upper and inner part of the thighs are excoriated by contact with irritating discharges, such as are present in the ulcerative stage of cancerous disease of the uterus, and under some other circumstances, the patient will lead us to infer that there is painful micturition, the pain arising in the latter case also from contact of the urine with a raw inflamed surface. The immediate neighbourhood of the outlet of the urinary meatus may be inflamed as the result of masturbation. I have been consulted in a case of this kind, in which painful micturition was the symptom most prominently attracting attention.

Alterations in the position of the uterus, by which the urethra is drawn out of its place, alterations of the bladder itself, or tumour of adjacent organs, may produce difficulty in micturition, as already pointed out. The difficulty is generally accompanied with more or less pain; but the pain is not, as a rule, the prominent symptom, though it may be so in a few exceptional cases. With a little care in cross-examination, it may generally be made out whether the pain or the difficulty came first in order of sequence; and this point is of importance in reference to the diagnosis.

(C) MICTURITION IS FREQUENT.

There is, perhaps, no one diseased condition of the vagina, uterus, bladder, or adjacent organs, which may not, at one time or

other, give rise to frequency of micturition, to say nothing of the varying conditions of the urine which may occasion the same phenomenon. Frequency of micturition can hardly, then, be considered as characteristic of the presence of any one diseased or altered condition.

Frequent micturition is often an early sign of pregnancy. During the first two months of gestation in primiparæ it is very generally present. Towards the latter end of pregnancy, also, it is pretty frequently observed. In hysteria, frequent micturition is a symptom often present during the attacks.

Displacements of the uterus may occasion frequent micturition; but more often difficulty and pain during micturition are produced thereby. In retroflexion of the uterus the micturition was most frequent during the night in two cases observed by Ashwell. In prolapsus uteri, there is frequency of micturition, especially during its early stages; it is diminished by the patient assuming the horizontal posture. *Ovarian* or other pelvic *tumours* occasion frequent micturition, owing to pressure on the bladder, as before remarked. Urinary difficulties are more frequently present during the early than the later stages of these tumours; when larger, they rise out of the pelvis, and the patient suffers less. One of the most important causes of frequent micturition is retroflexion of the *gravid uterus*, a condition in which urinary difficulties are rarely absent. There may be difficulty alone, but more generally difficulty and frequency of micturition are noticed; the latter may alone be observed. *Organic affections* of the uterus, as cancer, fibroid tumour, polypus uteri, or simple hypertrophy, or an inflammatory or hyperæsthetic condition of the organ, may, each of them, give rise to frequent micturition. Cancer would be recognised, after its very earliest stage, by the other symptoms present; fibroid tumour and hypertrophy might be unaccompanied by other symptoms; in polypus, menorrhagia is not often absent. Tenderness and pain are the characteristic symptoms of the inflamed or irritable uterus. Pressure on the bladder, and consequent frequent micturition, may be produced by abscess in the cellular tissue between the bladder and vagina, or by effusion of blood into the peritoneal cavity around the uterus in peri-uterine hæmatocele.

Dysmenorrhœa is often associated with frequent micturition; the tenesmus of the uterus extends to the bladder.

Certain conditions of the bladder itself may give rise to frequent micturition. *Calculus of the bladder, cystitis, cancerous disease of the organ*, the condition known as the '*irritable*

bladder, occasion this symptom, which is, moreover, observed in the early stage of the affections in question. The *presence of blood in the urine* occasions frequent micturition, as do also *various disordered conditions of the urine*. Irritation propagated from the kidneys, when these organs are diseased, or from the rectum, as when *hæmorrhoids* are present, may occasion frequency of micturition. Cases in which hæmorrhoids have to do with disturbances of the function of the bladder not seldom remain for some time obscure.

Inflammation of the urethra, as in gonorrhœa, or occurring irrespective of gonorrhœa, is a cause of frequent micturition: the urine is then passed in drops, with scalding pain. *Vascular tumour* of the meatus occasions frequency of micturition, distinguished from inflammatory conditions by the long duration of this symptom in the former case.

(D) MICTURITION INVOLUNTARY.

The conditions under which this symptom may be observed are the following.

Fistule in the Vesico-Vaginal Septum.—In such cases, the patient has hardly the slightest control over the evacuation of the bladder, the urine escaping from the bladder by the unnatural opening as fast as it is secreted. The condition dates from a definite period, at which time the vesico-vaginal septum was injured, and since when there has been involuntary micturition. The formation of these fistulæ is generally connected with the act of parturition; but *syphilitic* or *cancerous* ulceration may be the source of the evil. If the existence of fistula be suspected, the vagina and the bladder must be carefully examined.

There are cases on record in which involuntary micturition was produced by the existence of a *vesico-vaginal fistula*. Here the symptoms are very peculiar, but the nature of the case would be easily recognisable on careful study of its history, combined with examination of the vagina. If the urine were seen issuing from the os uteri, this would conclusively determine the diagnosis.*

At the latter part of *pregnancy* micturition is often involuntary, either entirely so, or only when the patient is in certain positions. The diagnosis under such circumstances presents no difficulty.

* A most interesting case of this kind is related by Dr. Leishman, in the *Glasgow Medical Journal*, October 1861. The patient in this instance could only retain urine within the bladder when lying on the side.

Retroflexion of the gravid uterus generally occasions great distension of the bladder; and not unfrequently a case of this kind comes before us in this form:—the patient complains of involuntary micturition; and, on examination, it is found that the condition really present is one of *retention of urine*, produced by retroflexion; small quantities from time to time escaping, owing to the extreme distension of the bladder. The period of pregnancy at which this distension of the bladder most commonly occurs is the fourth month. The distension of the bladder was supposed by William Hunter to be the cause of the dislocation of the uterus. Dr. Tyler Smith has shown that the retroversion (in many cases, at all events) is the primary evil; the fact being, that the retroversion existed before the pregnancy occurred.*

When the bladder is paralysed partially or entirely, as in the course of fevers, &c., great distension of the organ and *overflow* may occur, as in the case of retroflexion just noticed.

After parturition there is often involuntary micturition for a few days, which may extend to weeks or even longer. The muscular structure of the urethra has in such cases undergone undue pressure and injury during the act of parturition. In women who have large families, the neck of the bladder occasionally becomes thus permanently weakened, and the control over the bladder is subsequently always imperfect.

Tumours of the ovaries now and then produce involuntary micturition; the tumour drags on the bladder, and mechanically interferes with the action of the sphincters. This effect is more commonly witnessed when the tumour is large. Other tumours in the pelvis or neighbourhood may have a like effect.

Great hypertrophy of the nymphae was a cause of incontinence of urine in a case recorded by Breslau.† Owing to the traction of the enlarged nymphae, the action of the sphincter was interfered with.

Cancer of the uterus may extend to the neck of the bladder, and give rise to involuntary micturition, due then to ulceration of the under portion of the urethral canal, or of the bladder itself.

Congenital defect of power over the sphincter of the bladder is very rare, but the possibility of its existence should not be forgotten. Congenital incontinence of urine may be due to *imperfect formation of the urethral canal associated with epispadias*,

* *Obstetrical Transactions*, vol. ii.

† Scanzoni's *Beiträge für Geburtsk.* 1858.

of which a very interesting case is recorded by Dr. Röser.* The case was that of a young woman, aged 18, who had an incontinence from birth. The clitoris consisted of two parts; the upper and anterior portions of the orifice of the urethra were wanting, and the orifice itself was very large. A cure was obtained by bringing the separated halves of the clitoris together by a plastic operation.

2. MICTURITION NOT POSSIBLE.

In cases where the patient is absolutely unable to pass urine, it is evident that there is either an impediment to the escape of the urine from the bladder, or that there is no secretion from the kidneys. In other words, the case is one of *retention* or of *suppression of urine*. In the distinction of these two conditions, it is to be remarked that retention is, as a rule, accompanied by a desire to evacuate the bladder, which is for the most part absent in cases of suppression: the exception is noticed in cases of paralysis of the lower extremities, and some other instances where there is *sensational* as well as *motor* paralysis. Cases are rare in which there is a possibility of taking suppression for retention; but it might prove a dangerous mistake, and it is one more within the limits of possibility, to overlook retention, and set down the condition as one of suppression. Such cases occur in connection with the presence of diseases producing great prostration, fevers being the chief of these. The patient may for a considerable time have no evacuation from the bladder; and, this circumstance escaping attention, the bladder is allowed to go on increasing in size. The obscurity of the case is often increased by the fact (previously alluded to) of a small quantity of urine escaping from time to time from the distended organ, and retention all the while persisting to a dangerous degree. The fact that the patient has expressed no desire to evacuate the bladder must be disregarded; and, after a certain time has elapsed, an examination should be made, in order to ascertain whether the condition present is one of retention or suppression. A case is related by L. Vandeweren,† in which a woman believed to be dropsical died from the effects of rupture of the bladder due to retention. The definitive decision between retention and suppression depends, then, upon the results of examination.

* *Würt. Corr. Bl.* 1861, and Schmidt's *Jahrb.* vol. cxii. p. 47.

† Larbaud, *Recherches sur le Catarrhe, la Faiblesse et la Paralysie de la Vessie*, p. 68.

After labour the bladder is not seldom left distended for too long a time, owing to the patient experiencing no desire to evacuate it.

Cases in which retention is combined with involuntary micturition have been already disposed of.

Retention produced by inability to evacuate the bladder, coupled with distress and strong desire for the same, may arise from mechanical pressure on the neck of the bladder, of whatever kind. Whatever, in fact, may produce mechanical *difficulty* may produce also *retention*. *Fibroid* tumours of the uterine wall, enlargement of the uterus by fluid, &c., act in this way, as do also, but more rarely, *ovarian tumours*. The explanation given by Dr. West of this fact is, that the uterus is central, and therefore more likely, when enlarged, to press on the neck of the bladder and produce retention, than an ovarian tumour, which is generally lateral. In such cases, difficult micturition has generally preceded the retention. *Retroflexion of the uterus*, or *retroversion* of this organ, when suddenly produced, may also cause retention, which either supervenes suddenly, or is not detected for a long time in consequence of partial escape of the contents of the bladder occasionally taking place. In cases of *prolapsus of the uterus*, retention may occur during the catamenial periods, when the organ is larger and heavier, and in cases of prolapsus of the bladder itself, chronic inversion of the uterus, &c.

Another form of retention, not by any means uncommonly observed, is that witnessed in *hysterical* patients, arising from spasmodic contraction of the sphincter, associated, perhaps, in some cases, with an erectile condition of the clitoris. Retention from this cause is accompanied with a good deal of acute pain in the hypogastrium. The attack is of a more acute character than in the cases before considered. There is generally a history of previous attacks of a similar character; and the previous history of the case affords, on investigation, pretty complete evidence of the presence of hysteria in some one of its multitudinous forms. In many cases, the nature and cause of the presumed retention cannot be made out without an examination.

Lastly, there are cases in which no urine is passed because there is none in the bladder. This kind of *suppression* has been known to be produced by pressure of large ovarian or other tumours on the ureters. More ordinarily, however, suppression in the true sense of the word is due to other causes, the consideration of which does not come within the scope of the present enquiry.

CHAPTER VII.

SYMPTOMS REFERABLE TO THE RECTUM.

DIFFICULTY and PAIN in DEFÆCATION—Derangements or Alterations of Generative Organs giving rise to these Symptoms.

DIARRHŒA—Condition of the Fæces—Discharges from the Rectum.

It is not intended here to enter on a full discussion of the disorders to which the rectum is liable, this being beyond the scope of the present work. It is necessary, however, to allude briefly to those affections of the rectum most frequently observed in women, some of which are associated with, and others of which are dependent upon, disorders or derangements of the neighbouring organs, and especially of the uterus.

Cases do very frequently present themselves, in which there is evident disorder of the functions of the rectum, which disorder is found, on careful enquiry, to be due, in reality, to a primary, but not so evident, disorder of the uterus or its appendages. It is, therefore, necessary, in order to avoid mistakes in diagnosis, to indicate, as particularly as the nature of the case admits, those symptoms referable to the rectum, which should lead us to suspect the existence of an affection of the generative organs. When affections of the generative organs are known to be present, and disorder of the functions of the rectum is superadded, the nature of the connection is obvious; and the diagnosis is not obscured, as it is in the class of cases before referred to. Mr. Baker Brown has directed special attention to the subject now alluded to in his work '*On Surgical Diseases of Women*,' where will be found two chapters headed respectively, *On Diseases of the Rectum resulting from Certain Conditions of the Uterus*, and *On Certain Diseases of the Rectum producing or simulating Uterine Disorder*; and containing cases in illustration.

It requires but little reflection to perceive that between the uterus and its dependencies, and the rectum, there must exist very important relations, the thing being regarded from a mechanical point of view alone. The pelvis being a rigid bony canal, and

incapable of dilatation, it is evident that enlargements, tumour, &c., of the uterus, may seriously impede the due performance of defæcation. This is only one instance out of many which might be adduced to prove—what, indeed, daily experience renders familiar to the practitioner—the mutual interest, so to speak, which the uterus and generative organs on the one hand, and the rectum on the other, have in the healthy action and condition of each other.

DIFFICULT DEFÆCATION.—One of the most common of the disorders of the rectum which come under our notice is that consisting in *difficult defæcation*—constipation, as it is ordinarily termed. As a rule, the origin of this condition is not local, but it is of a more general nature; in other words, the cause is a *functional* one, although that functional disturbance (as in the obstinate constipation often associated with amenorrhœa) may arise from disorder of the generative organs.

The *mechanical* causes of constipation have a more direct interest for us, as coming more within the limits of the present enquiry.

The pressure of the enlarged uterus due to *pregnancy* often causes constipation, especially during the first third of pregnancy, before the organ rises above the pelvic cavity. In many cases, the constipation is, indeed, a sign of pregnancy; as a rule, enlargement of the uterus is more likely to produce constipation when it is not so considerable as to induce the uterus to leave the pelvis. When pregnancy is added to displacement of the uterus, as in cases of retroversion of the gravid uterus, the disturbance of the functions of the rectum is usually extreme. Mechanical enlargement of the uterus, of another, but rare, kind, that due to *retention of the catamenia*, also produces constipation. *Ovarian tumours, fibroid or cancerous tumours, or polypi of the uterus*, may all give rise to more or less difficulty in defæcation. In the cases hitherto mentioned, the defæcation is difficult, and the difficulty noticed may be, but commonly is not, extreme; and there is, moreover, only *difficulty* present in the majority of cases. The degree of difficulty observed is by no means in proportion to the size of the tumour, but depends rather on the extent to which the tumour encroaches on the cavity of the pelvis. Thus, the constipation produced by an ovarian tumour is often relieved by the increase in the size of the tumour, and its consequent rise into the abdominal cavity.

PAINFUL DEFÆCATION.—Those tumours or enlargements of organs within the pelvis hitherto referred to do not (cancer excepted)

generally give rise to much pain; they increase slowly, and the organs accommodate themselves to their altered circumstances. But there are cases of constipation of a mechanical origin, in which the difficulty of defæcation is accompanied with pain during the act, and often with pain of a very acute character. Dislocations of the uterus or ovaries, attended with enlargement of these organs, frequently give rise to difficult and painful defæcation. Retroversion or flexion of the gravid uterus produces these symptoms in a marked degree: in flexion of the unimpregnated uterus, pain and difficulty are pretty constantly present; in short, any kind of dislocation of the organ may be attended by this combination of symptoms. Dr. Rigby believed the ovary to be liable to a peculiar displacement, and that, by falling into the fossa between the uterus and rectum, it occasioned both pain and difficulty in defæcation, and it is probable that this is occasionally, but not frequently, the case. In cases of *prolapsus* of the uterus, difficulty and pain are observed very frequently; also in prolapsus of the posterior wall of the vagina; and in cases of *inversion* of the uterus. Dr. McClintock calls attention to a condition of the rectum which he has observed in connection with prolapsus uteri, and which was the cause of the latter affection—viz. stricture: the straining efforts of the patient in defæcation brought about the uterine displacement. The presence of effusions of blood around the uterus—*peri-uterine hamatocèle*—causes great pain and difficulty in defæcation. *Cancer* of the uterus is often associated with a degree of pain during defæcation amounting to absolute torture; difficulty of defæcation is not unfrequently one of the first symptoms of cancerous disease of the uterus. In *hypertrophy* or *tumour of the cervix uteri*, there is often great local tenderness, and consequent painful defæcation; less commonly when the body of the organ is enlarged, but very commonly when the uterus is the seat of that affection to which Gooch gave the name of the ‘irritable uterus.’ It is worthy of remark that, in most of these cases in which the act of defæcation is rendered difficult and painful by the presence of these affections, there is also pain attendant on locomotion.

Fissure of the rectum is a condition giving rise to extreme pain during defæcation; and constipation is also usually present in such cases, the patient’s dread of pain inducing postponement of the evacuation as long as possible.

Hæmorrhoids are often a cause of painful defæcation in both sexes. In women we frequently find these troublesome tumours present, together with enlargement of the uterus of all kinds, but

more especially in cases of engorgement and congestion of this organ. The enlargement gives rise to the production of hæmorrhoids, for the most part in a mechanical manner.

In many of those cases in which defæcation is difficult, there is also an unusual *frequency* of defæcation. It chiefly arises in consequence of the pressure produced by enlargement of some of the pelvic contents. It is to be distinguished from an irritable condition of the rectum itself by the fact that pressure signs of other kinds are also present. There is a form of nervous dysmenorrhœa in which the chief suffering is dependent on continuous straining efforts at defæcation.

DIARRHŒA, it is hardly necessary to observe, is due to a great variety of causes. It is frequently, however, dependent on uterine affections. Pregnancy may produce diarrhœa, during the early months, of a very intractable, and occasionally obscure form. (Dr. Tyler Smith.)

CONDITION OF THE FÆCES.—Occasionally the condition of the fæces themselves furnishes us with data of a suggestive character in reference to the existence of uterine disease. Thus, in retroflexion of the uterus, the fæces have a banded or flattened appearance, indicative of pressure on the rectum. The flattening is not noticed when pelvic tumours of greater size are present, because the pressure then affects a part of the rectum higher up. Again, when stricture of the rectum is suspected to be present, the shape and condition of the fæces give us important negative or positive information.

DISCHARGES FROM THE RECTUM, of various kinds, call for a few remarks. In most of those cases where the amount of pressure exercised by enlarged pelvic organs or tumours is considerable, a *mucous discharge* from the rectum is observed. This discharge is kept up and aggravated by the frequent straining efforts of the patient. *Bloody discharges* from the rectum may proceed from pressure, from undue vascularity of the bowel, and straining on the part of the patient, combined; they may proceed from stricture of the rectum of non-malignant character (rare); or from cancerous disease of this viscus, which is very frequently associated with a like disease of the uterus, when in its advanced stage; or from opening the hæmatic cyst of a peri-uterine hæmatocele into the rectum, in which case flesh-like bodies may be from time to time passed by stool. Cases are not rare in which, cancerous disease of the uterus being present, the whole intensity of the symptoms is transferred, so to speak, to the rectum, the patient paying little attention to

the uterine symptoms, but laying great stress on the sufferings attending defæcation, &c. In these cases there is, of course, a liability to overlook the primary disorder. The great pain and difficulty in defæcation, the occasional bloody and puriform offensive discharges, these are distinctive features of this condition.

Puriform discharge from the rectum, preceded, it may be, by slight sanguineous discharge, may occur from bursting of an abscess in the neighbourhood into the canal. Now and then ovarian cysts are evacuated by spontaneous bursting of the same into the rectum, and then a *serous* or *glairy* discharge from the bowel may continue for some days until the cyst is emptied.

For further information respecting disorders of the rectum, the reader is referred to special treatises on this subject.*

* See the well-known works by Mr. Quain, Mr. Curling, Mr. Ashton, and Mr. Syme, respectively, on Diseases of the Rectum.

CHAPTER VIII.

ABNORMAL SENSATIONS REFERABLE TO THE GENERATIVE ORGANS.

PRURITUS OF THE GENITAL ORGANS.—Nature and Seat of the Disorder—Various Conditions under which it is observed—Diagnosis of the cause of the Pruritus in particular Cases.

PAIN REFERABLE TO THE INTERNAL GENERATIVE ORGANS.—(A) Painful Sensations associated with Menstruation (Dysmenorrhœa)—What is the cause of the Pain in Cases of Dysmenorrhœa?—Two Classes of Cases: 1. Those in which there are Pain and impeded Discharge; 2. Those in which Menstruation is simply painful—Diagnosis of these two classes of Cases. —(B) Pain experienced irrespective of Menstruation—Pain in the Back—Pain in the Hypogastric Region: Intermittent Pains: Pains more or less constant; Pain of Inflammatory Character; Acute, intense Pain; Hysterical Pain; Bearing-down Pains—Pains in the lower Extremities.

PAIN REFERABLE TO THE EXTERNAL GENERATIVE ORGANS.

MOTIONS, OR PSEUDO-MOTIONS, FELT WITHIN THE ABDOMEN.—Quickening; Description of the Phenomena so entitled—Sensations simulating those of Quickening; their causes.

IN this chapter it is proposed to consider, as systematically as the nature of the subject allows, the abnormal sensations of various kinds experienced by the patient and referred to the generative organs, and to point out the diagnostic value of the data in question. Pruritus of the genital organs—the various kinds of pain felt by the patient during, or connected with, menstruation, or occurring at other times—motions or pseudo-motions in the abdomen, and felt by the patient—these will successively come under notice.

PRURITUS OF THE GENITAL ORGANS.

The terms ‘pruritus vulvæ,’ ‘pruritus of the vagina,’ &c., have been used to designate a class of symptoms referable to the generative organs, in themselves very distinctive and characteristic, and which are also exceedingly troublesome and inconvenient to the patient.

Varying exceedingly in form and degree, the essential characteristic of the class of symptoms now to be considered is an itching sensation, impelling the patient to relieve herself by rubbing or

scratching the part affected. The sensation is now and then a kind of formication only—a creeping, uncomfortable feeling on the surface of the external generative organs. More commonly, however, the sensations complained of are more intense in degree and somewhat different in kind. The irritation was accurately described by Dr. Rigby as ‘like that of urticaria; viz. a sensation of intolerable pricking and tingling, combined with burning heat and intense itching.’* It is worse at some times than at others; it is not seldom quite intolerable to the patient. Scratching affords hardly a temporary relief, and shortly itself gives rise to further inconveniences. Combined with the itching there is more or less constantly a feeling of heat in the parts affected, quite as distressing as the other sensation.

Even in the worst cases, there are usually remissions, during which the patient is more free from discomfort; and, as a general rule, it is stated that at certain times of the day, or under certain peculiar circumstances, the sensation is experienced much more intensely: the affection is, indeed, more or less paroxysmal. Warmth particularly is liable to bring on a paroxysm; the heat of the bed is especially unbearable. In a case under my own observation, the patient was obliged to leave her bed almost every quarter of an hour to obtain relief. After eating or drinking, too, the distress is usually greater. The congestion of the genital organs, associated with approach of the menstrual period, aggravates the affection.

The actual *seat* of the sensation is open to some variation. In most cases, the irritation is not confined to one spot, but is felt equally over the pudendum, over the labia, and, in fact, all round the vaginal aperture. In some cases, the nymphæ, the surface of the clitoris, and the adjacent surface of the vaginal canal, especially the anterior commissure above the clitoris, are the parts more particularly affected. Lastly, there are a certain number of cases in which the sensation has its seat, not at the external generative organs, but more internally.

The affection may be observed in women of all ages. It is most frequently observed at the climacteric period, when the menses are about to cease, although it is by no means limited to this period. It is more often observed in women advanced in life than in young women. The unmarried and married are almost equally liable to it.

* *On Diseases of Women*, p. 247.

As regards the duration of the affection, it varies. Women sometimes remain subject to it for several months, or even longer. The pruritus is in many instances so persistent that the patient becomes worn out, exhausted, and prostrated in the extreme, owing to the want of rest, the annoyance, and the pain so long continued. The necessity of applying the fingers to obtain a slight temporary relief by scratching excludes her from society. Altogether, a bad attack of pruritus is about as troublesome and inconvenient an affection as any to which a woman can be subject.

What is the nature, and what are the causes, of the affection? The affection varies very much as regards its nature and causes in different cases. It is possible that at the beginning the affection may be in the majority of cases identical; but in practice we find that most cases, when they come under observation, are of a mixed character. Scanzoni regards the affection as hyperæsthesia of the sensitive nerves of the vagina, in some cases idiopathic, in others secondary, and in the latter depending on various affections of the ovaries, vagina, uterus, &c.; and the various alterations of the external generative organs witnessed in conjunction with it are considered by this author secondary in their nature. These latter alterations have by many other authorities been considered as something more than secondary. The point at issue it is not easy absolutely to determine; for we do not, as a rule, see the patient until some little time has elapsed, and the external organs of generation have been subjected to much rubbing and irritation, which in themselves are sufficient to produce many of the local changes then and there witnessed.

Leaving, then, this theoretical point, we may state in the next place the chief conditions under which, or associated with which, this pruritus of the genital organs may be observed.

Any circumstances favouring *congestion of the generative organs* may give rise to it. Thus, in the earlier months of *pregnancy* it is not rarely observed. Where a sluggish, inactive condition of the abdominal viscera is present, associated with digestive derangements, as in individuals taking but little active exercise and living too well, there exists a liability to the affection: in cases of the latter description, hæmorrhoids are frequently present, and constipation is very generally observed. It is in cases coming under this category that the pruritus is found most often associated with a good deal of hyperæmia of the external generative organs; and in this class of cases, also, the scratching and rubbing most frequently have the effect of producing inflam-

matory changes of the vulva and parts adjacent. The conditions which have been mentioned are probably, for the most part, only predisposing causes of the affection.

Chronic diseases of the uterus are frequently connected with pruritus of the genital organs; in *carcinomatous* disease of the uterus, the affection in question is certainly very frequently witnessed. Possibly the frequent association of uterine cancer and pruritus is connected with the acrid character of the fluid discharges then passing over the vulva. Cases in which it was due to *superficial granular erosion of the os uteri* are mentioned by Drs. West and Churchill. Alterations in the position of the uterus, as *flexions*, displacements, &c., are considered by Scanzoni causes of pruritus; so also *tumours* of the uterus.

Radical disorder of the general health, quite independent of disease of the generative organs, has been found to be the cause of pruritus in some cases. Thus Dr. West alludes to an instance in which a young lady suffered severely from pruritus, which turned out to be due to diabetes.

An *acrid condition of the secretions of the sebaceous glands of the vulva* appears to be sometimes the cause of the pruritus. *Ascarides* in the rectum have been known to produce it.

In individuals of uncleanly habits, pruritus of the vulva is sometimes produced by the presence of *pediculi*.

An *aphthous* form of inflammation of the vulva was first alluded to by Dr. Dewees as now and then giving rise to pruritus of the vulva; the inner surface of the vulvar commissure being covered with little aphthous patches, and more or less congestion of the parts generally being conjoined. How far this condition is primary or secondary cannot be considered as determined.

Inflammation of the mucous follicle of the vulva—*vulvar folliculitis* (Oldham)—is a disease of the vulva in which troublesome pruritus may be present.

In a case which came under my own notice, very intense and obstinate pruritus was found to be dependent on the presence of *warty growths from the under or vaginal surface of the urethra*, the whole forming a tumour the size of a walnut. In this case the removal of these growths was necessary, and a cure soon afterwards resulted. The *vascular tumour of the urethra*, which, as is well known, grows within or at the urethral orifice, gives rise to great disturbance of the function of micturition; less frequently, it is a cause of pruritus.

Lastly, it may be stated generally that there are few alterations

in the mucous surface at or near to the vaginal aperture which may not be associated with pruritus.

In endeavouring to determine the cause of the pruritus in a particular case, it is necessary to take into consideration the bearing of the facts which have now been mentioned on the case before us. If pregnancy be present, the pruritus probably depends on that, and may then assume a very obstinate form. Dr. Tanner mentions a case in which it only disappeared after the uterus had been emptied of its contents.* If the symptoms be at all urgent, or if they have been noticed for any considerable time, it is pretty nearly certain that some local changes, requiring actual inspection of the vulva and external genitals for their due recognition, will be found to be present; and, whether we consider the latter as the cause or the effect of the pruritus, they will equally require particular treatment. Hence, in chronic cases especially, the necessity for actual examination in order to make a satisfactory diagnosis. If, on external examination, no alteration be detected, recourse must be had to digital or other examination of the uterus and vagina. And care must be taken that the *general* condition of the patient—a point much insisted on by Dr. Rigby—as well as the *local* changes actually detected, be allowed its due place in the estimate taken of the case, or the treatment which is adopted will either prove palliative only, or will fail entirely in giving the desired relief. I have met with a case in which the pruritus was evidently in great part dependent on disorder of the digestive apparatus produced by immoderate use of spirituous liquors, and where the nature of the case was at first not clear, owing to the concealment of the habit in question on the part of the patient.

PAIN REFERABLE TO THE INTERNAL GENERATIVE ORGANS.

Pains referable to the internal generative organs may, for the sake of convenience, be divided into two classes, viz.: 1. Those associated with the performance of the function of menstruation—dysmenorrhœa; and 2. Painful sensations experienced irrespective of menstruation.

(A) PAINFUL SENSATIONS ASSOCIATED WITH MENSTRUATION.

The term ‘dysmenorrhœa’ has been long employed for the purpose of designating the symptoms now to be considered; it has

* *Signs and Diseases of Pregnancy*, p. 436.

been used, and almost indiscriminately, to designate cases in which *pain* and *difficulty*, singly or jointly, attend the performance of the function of menstruation. Its use in this manner has had the effect of giving the idea of a distinct disease for what is really a collection of symptoms due to causes variable in their origin and widely different in their nature. What we have now to do is to examine and analyse the symptoms in question, and to endeavour to lay down some rules for the due discrimination of the several causes which may produce them.

The phenomenon with which we have to deal is the presence of *pain*. And it is obvious that the first object we have in view, both in endeavouring to understand the thing abstractedly, and in making a diagnosis at the bedside, is to try to understand what is the essence of this pain: it is the more necessary inasmuch as there is an interest attaching to this question not exclusively connected with the subject of dysmenorrhœa.

I propose, then, to devote a short space to the consideration of this question:—

What is the Cause of the Pain in Cases of Dysmenorrhœa?

In reference to the pathology and treatment of dysmenorrhœa, this question is of primary importance; but it is nevertheless true that hardly any attempt has been made by systematic writers on this subject to give an explanation of the actual and precise nature and seat of the painful sensations experienced by the patient. Some of the explanations which have been offered are not so consistent, either with themselves or with the facts which come before us in practice, as might be wished.

Now what are the facts? Hardly two patients suffer alike during menstruation; and we see a regular gradation between cases in which there is very slight suffering, and others in which the agony is such as to be almost unendurable. The pain also varies in its position, but it is for the most part referable to the uterus; and, in the cases where there is most pain, the pain is generally identical in position with that of this organ. Pains of various degrees of intensity may be felt at other parts of the body; but they are added, so to speak, to the other—the essential pain, which is situated in or about the pelvic region.

What is the relation of the pain to the flow of the menstrual fluid? This, being the vital point of the whole question, demands our earnest attention.

We find in practice several variations in respect to the manner

in which these two things, the pain and the flow of the fluid, are related one to the other.

In some cases it will be found that the menstrual fluid escapes from the uterus from the first; while the patient has a little, but only a little, to complain of during the whole menstrual period.

In other cases, on the contrary, the appearance of the menstrual fluid is delayed for a certain time, and in the meanwhile the patient suffers more or less severely from pain; the discharge appears, and the pain thereupon quite or almost completely ceases.

We have, then, two classes of cases—1. Those in which there are pain *and* impeded discharge; and 2. Those in which menstruation is simply painful, the discharge being apparently free.

1. MENSTRUATION IS PAINFUL, AND THE DISCHARGE IS IMPEDED.

This class of cases are those more ordinarily spoken of under the general term ‘dysmenorrhœa.’ The word ‘dysmenorrhœa’ is used widely enough; but, as already stated, it is usually taken to mean pain in the process of menstruation, as well as impediment to the discharge. This will be evident from the following quotations from two works of standard authority—those of Dr. West and Dr. Rigby—which further contain descriptions of the symptoms of dysmenorrhœa as ordinarily observed.

‘The pain,’ says Dr. Rigby, ‘precedes the discharge, and rises to its acme just before the discharge appears. When this has taken place, the congestion diminishes, the pain abates, and perhaps disappears before the discharge has ceased. This, on the whole, is the most common mode of its appearance. In many cases, however, the discharge appears first; and, having lasted for a short time, it stops suddenly or diminishes considerably, and is then followed by an attack of pain which continues until the discharge returns.’*

Let us hear Dr. West’s description of the *congestive* form of dysmenorrhœa:—

‘During the first twenty-four or thirty-six hours of each menstruation, the discharge in general is but scanty, and the pain is very severe. At the end of this time, however, sometimes even sooner, the hæmorrhage often becomes abundant; and as the blood flows, the pain abates, and then ceases altogether. . . . Sometimes, in these cases, the menstrual flux at no time becomes abundant, and consequently the relief which nature gives is very partial.

* *Op. cit.* p. 30.

‘When this is so, the womb continues to ache and throb during the whole of the menstrual period, and is left afterwards tender and painful.’* Further:—‘In some of the cases, the discharge, having continued for a few hours, ceases, and then comes on again; while, though *scanty*, it is intermixed with small coagula, owing probably to the blood having been poured out so slowly as to allow of its coagulating within the uterine cavity.’

Again, speaking of ‘*neuralgic*’ dysmenorrhœa, as witnessed usually in young women who begin to menstruate later than ordinary, Dr. West states: ‘The pain in such cases precedes menstruation for a day or two, generally reaches its greatest intensity in the course of the first twenty-four or thirty-six hours of the catamenial flow—being sometimes so intense that the patient rolls on the floor in agony—and then by degrees subsides, though it does not cease entirely till the period is over.’

It is impossible to read these descriptions—and we know that they are truthfully drawn—without being struck by the evident connection of the *pain* with the *absence of the discharge*. ‘The pain rises to its acme just before the discharge,’ says Dr. Rigby. ‘As the blood flows, the pain abates, and then ceases altogether,’ says Dr. West. In fact, it is as clear as anything can well be, that the pain is dependent, in these particular typical cases, on absence of the discharge.

But how dependent? Is the pain caused by *non-secretion* of the fluid? or is it caused by *retention* of the menstrual fluid, there being some impediment to its escape from the uterus? Dr. West explains the matter thus:—

‘The congested womb ached till nature bled it, just as the head aches, when the brain is congested, till the cupping-glasses or the leeches have relieved the overloaded cerebral vessels.’ (p. 71.)

Dr. Simpson, a still more recent writer on the subject, says, in reference to the seat and origin of the pain in dysmenorrhœa, that it is ‘one of those points on which our knowledge is particularly defective;’ but he refrains from dwelling on the subject. In his classification of dysmenorrhœa, Dr. Simpson considers that there is an ovarian and a uterine form of dysmenorrhœa, that there is a neuralgic, a congestive, an inflammatory, a gouty or rheumatic dysmenorrhœa, a dysmenorrhœa caused by organic diseases or displacements, a membranous dysmenorrhœa, and, lastly, an obstructive dysmenorrhœa.

* *Op. cit.* p. 71.

The explanation given by Dr. Simpson is the same as that of Dr. West and others, so far as cases of ordinary dysmenorrhœa are concerned; but, in reference to cases of 'obstructive' dysmenorrhœa, Dr. Simpson associates the pain with the *retention* of the menstrual fluid, and with the distension of the uterus thereby produced.

But it will be found, on examination, that the symptoms of ordinary dysmenorrhœa, as described by Drs. Rigby, West, and others, and the symptoms of 'obstructive' dysmenorrhœa, are to all intents and purposes identical; and the arguments derivable from an attentive consideration of these symptoms lead to the conclusion—a conclusion which, I think, must be accepted—that the pain suffered by patients in ordinary cases of dysmenorrhœa, *i. e.* where there is delay in the appearance of the discharge, is due to retention of menstrual fluid within the uterus, and to the distension thereon consequent.

Let us consider for a moment the normal condition and presumed physiological action of the parts concerned in menstruation.

The essential part of menstruation, so far as the uterus is concerned, appears to be growth, thickening, and increase of vascularity in the mucous membrane lining the body of the uterus; the tissue of the uterus itself being also congested, and the venous plexuses situated around this organ being at this time filled and gorged with blood. The menstrual blood is poured out, as is generally believed, by the mucous membrane of the body of the uterus. Now, where the cavity of the body of the uterus and the cervical canal join, the canal is narrow; and in cases where there has been no reason to suppose any morbid narrowing to have occurred, it has frequently been found so small as to admit with some degree of difficulty the bulbed termination of the uterine sound. Dr. Henry Bennet, indeed, contends that this latter condition is the normal one. Hence it follows that, in a by no means insignificant proportion of cases, the internal os uteri, as it is termed, is so narrow that very little is needed to close it altogether, or at all events to so close it that the escape of fluid from the uterine cavity is rendered difficult.

It has been said that it is found that 'such a contraction of the os and cervix uteri as to impede the discharge of the menses *guttatim* is very unusual' (Dr. West). But I would remark, that a canal which may be a very sufficient outlet in one individual or under one set of circumstances may be inadequate in another individual and under different circumstances. There are many things to be considered, in respect to each of which considerable variations are

observed: there is the state of vascularity of the uterus itself; there is the state of vascularity or fulness of the surrounding organs; there is the quantity of blood poured out into the uterine cavity; &c.

‘In mild cases,’ says Dr. Rigby,* speaking of cases of ‘mechanical’ dysmenorrhœa, ‘a moderate amount of distension is sufficient to effect the necessary degree of dilatation of the os uteri, and the accumulated fluid is discharged with complete relief to the patient; but where the obstruction is greater and produces greater resistance, the accumulation goes on, the pain becomes more severe, and now, as the uterus is roused to contract upon the retained fluid, she experiences exacerbations of intense suffering, similar to the pain which is sometimes seen in bad cases of abortion or early miscarriage, until, after a long and agonising struggle, the obstruction is overcome, and the discharge takes place.’

Some remarks of Dr. Simpson on this point may be here quoted:—

‘When the amount of fluid secreted is too great to allow of its easy escape, it becomes accumulated in the cavity, and causes pain by distending and exciting the uterus. . . . In this way, retention and obstruction may even occur with a comparatively wide os, provided the menstrual fluid be very rapidly secreted, and especially if it be mixed up with solid masses of coagula or fibrine; and, on the other hand, in cases where the uterus gives out only and always a very small and scanty, or rather a very slow secretion, no pain may be experienced, although the os may be of the smallest calibre.’†

These observations, made by the authors in question in relation to obstructive dysmenorrhœa only, I would apply more generally to those cases of dysmenorrhœa in which pain and delay in the appearance of the discharge are associated.

Contortions of the Uterine Canal.—The uterus is liable to certain morbid alterations in position and texture which may still more materially affect the patency of the canal of exit. Thus it may be bent on itself like a retort, by which the canal is necessarily somewhat constricted, or the axis of the canal so altered as to affect sensibly its patency. Within the tissue of the uterus, frequently grow fibrous tumours, which may, and do occasionally, encroach on the canal, and thus constrict it. The same result may be produced by polypi growing within the uterine cavity itself; and

* *Op. cit.* p. 51.

† *Med. Times and Gaz.* March 12, 1859.

occasionally we find the whole cervix uteri congenitally narrow, from an apparently defective development of this part of the generative organs. A very important class of cases are those in which the lower segment of the uterus—the cervix—has become hypertrophied, indurated, and otherwise diseased: here the canal may be contorted and twisted in such a way that the extra amount of congestion which occurs at menstruation so swells out the cervical tissues as to seriously affect the patency of the canal. A very marked instance of this latter class of cases I have recently had occasion to observe.

All these considerations are sufficient to show that we have not far to go in order to find a number of conditions capable of producing constriction of that canal by which the menstrual fluid is evacuated from the uterus. Conditions of the kind alluded to are known to be associated with severe dysmenorrhœa; and the pain in such cases is completely accounted for by the retention, temporary or partial, which we may suppose to be present under these circumstances.

It is probable that the congestion of the uterus which is present during menstruation, involving as it does ‘erection’ of the organ,* may under certain circumstances impede the escape of the secreted fluid by producing constriction of the excretory canal, and thus lead to menstrual retention. This would be more likely to be observed in cases where the canal itself was of less than the average calibre. The category of cases here alluded to may, in one sense of the word, be considered as cases of ‘spasmodic’ dysmenorrhœa; and they are doubtless those with which we are familiar in practice as particularly amenable to an antispasmodic treatment.

* See Rouget’s valuable *Researches on the Erectile Organs in the Female*, &c., Brown-Sequard’s *Journ. de Physiol.* vol. i. p. 320. The presence of an erectile apparatus surrounding the body of the uterus has most important bearings on many points of uterine pathology. The erectile organs of the ovary have been also described by M. Rouget in the paper just alluded to, and in another paper published in 1855. Mr. J. R. Traer drew attention to the ovarian erectile apparatus in 1857, in a paper read before the Anatomical Society of Paris. Delineations and descriptions of the erectile organs of the uterus and ovaries are contained in Dr. Savage’s recent work, *Illustrations of the Surgery of the Female Pelvic Organs, in a Series of Plates taken from Nature*, London, Churchill, 1863. In Dr. Farre’s admirable article ‘Uterus,’ in the *Cyclop. of Anat. and Phys.* (published in 1858), the description of the blood-vessels of the uterus is almost identical with that given by Rouget. Rouget’s arguments for the erectile character of the vascular structure surrounding the body of the uterus appear conclusive. The erection takes place, according to this author, during menstruation and ovulation, and probably, also, during the act of intercourse.

Other arguments for the truth of the explanations now offered may be drawn from the facts, that, in the first place, dysmenorrhœa of the kind now under consideration is generally associated with sterility; that, in the second place, it is not observed in women who have had children, unless in connection with some recognisable and very obvious alteration in the cervix uteri of such a nature as to interfere with the patency of the canal—of which we have one instance in that obliteration of the canal which is sometimes the result of the parturient process;—and, in the third place, from the results obtained by what may be termed the mechanical treatment, consisting in dilatation of the utero-cervical canal, or incision of the same. It is incontestable that, in many cases of severe dysmenorrhœa, the pain has been removed by the treatment in question, which would, of course, have the effect of preventing the occurrence of menstrual retention by widening the canal of exit.

A careful study of the symptoms and phenomena observed in cases where actual obliteration of the os uteri, permanent or temporary, has been known to be present, the menstrual product having been retained within the uterus and unable to escape, throws a considerable degree of light on the question now under discussion. In the work of Bernutz and Goupil,* we find collected a very large number of accurately observed cases in which the kind of menstrual retention now alluded to was unquestionably and demonstrably present; and means are thereby afforded for studying the subject analogically, so to speak. The difference between the two classes of cases—those in which there is complete menstrual retention, as in the instances just referred to—and those in which there is what may be termed incomplete or partial menstrual retention—is only one of degree.

An observation of Scanzoni's is very important in reference to the subject now under discussion. Speaking of nervous dysmenorrhœa, Scanzoni says:—

‘The causes of this anomaly are still imperfectly known. . . .
 ‘Finally, in an etiological point of view, the following circumstance
 ‘also deserves consideration, that the abnormal nervous irritation
 ‘of the uterus may give rise to reflex movements of the organ, and
 ‘to a convulsive contraction of the cavity of the neck. Hence the
 ‘escape of the blood which is already effused is impeded by an
 ‘obstacle which irritates in its turn the motor nerves of the body

* *Clin. Méd. sur les Mal. des Femmes*, tom. i.

‘and fundus of the uterus, and thus provokes painful contractions. This is what to us appears particularly to take place in cases where after intense expulsive pains, lasting perhaps several hours, the patients suddenly eject a considerable quantity of blood, partly liquid and partly coagulated, and find instantaneous relief.’*

The tendency in Scanzoni's mind towards an ‘obstructive’ explanation of the pain is hereby made particularly evident.

And, lastly, it is known and admitted by standard writers that, in cases of dysmenorrhœa, the tumour perceived through the abdominal walls increases in size before the discharge appears—a fact which is perfectly consistent with the explanation now offered.

The cases which have passed under my own observation have offered the strongest possible confirmation of the correctness of the foregoing conclusions, and of the truth of the position now maintained, that in ordinary cases of dysmenorrhœa, in which there are, first pain, and, after a variable time, appearance of a discharge, what we have before us is really *partial but temporary menstrual retention*.†

Naturally, the cavity of the uterus is very small, and incapable, unless dilated, of containing more than a very small quantity of fluid. It is the result of experience, that different individuals bear dilatation of the uterine cavity very variously; and hence it follows that retention of menstrual fluid within the uterus may produce different degrees of pain and very various degrees of suffering in different individuals.

‘*Membranous Dysmenorrhœa.*’—There is a class of cases, possessing peculiar interest, in which, at each menstrual period, or very frequently so at all events, a membrane is discharged. The question as to the nature of this membrane has been already considered (see p. 73). Its expulsion is frequently attended with pain, just as happens in cases of abortion, and this pain is of precisely the same character as in cases of abortion, and indeed as in the cases of menstrual retention just described. But in these cases of ‘membranous’ menstruation, there is generally present also

* *Diseases of Females*, American Translation, p. 345.

† In an able paper published in the *London Med. Rev.*, June 1862, the month in which the above remarks appeared as a Lecture in the pages of the *British Medical Journal*, my friend Dr. Meadows has urged, in favour of views nearly identical with those above stated, many of the arguments which have been here made use of. He insists particularly on the fact that the condition of the internal os uteri may be supposed to be very different before and during menstruation, and that it is an error to draw inferences from the inter-menstrual condition as regards the phenomena present while the secretion is going on.

another kind of pain, a pain seated in the ovary—a continuous severe pain, of very different character from the expulsive pains of *retention*. This ovarian pain was always present in two cases which I have myself observed: in both it was seated in the left ovarian region, and it was rather more severe at the menstrual period. In both these cases the two kinds of pain were distinct. These cases have been termed by previous writers (Oldham, Rigby) cases of ovarian dysmenorrhœa. It is important to separate the two elements in the consideration—the ovarian and the uterine—one from the other. The *formation* of the membrane does certainly appear to be in some way connected with the constant ovarian discomfort; the *expulsion* of the membrane may be, and is usually, attended with pains of the kind previously alluded to. In considering the treatment of these latter cases, some further remarks on the pathology of the subject will be required.

We may now consider the next series of cases, those in which

2. MENSTRUATION IS SIMPLY PAINFUL.

In many cases where the menstrual period is one of suffering, more or less habitually, to the patient, this suffering is dependent on causes different from those just alluded to, and in which there is evidence of retention of menstrual fluid. Thus, in some cases, the painful sensations present appear to be seated in, or to radiate from, the *ovary* itself, this organ being in a condition which is one of congestion, of irritation, or, as described by many authors, of inflammation. In other cases, the *uterus* seems to be the seat of the painful sensations; a continuous aching pain is experienced, analogous in kind to neuralgia seated in any other part of the body—the face, for instance. This kind of pain seated in the uterus is very different from the spasmodic, contractive, intermittent pain which, as before explained, is suggestive of *retention*. Further, the ovaries and the uterus may both be the seat of pain felt during menstruation.

Ovarian Folliculitis.—The condition of the ovaries during menstruation, and the relation subsisting between morbid conditions of the ovaries and pain experienced during menstruation, are subjects of great interest, but our knowledge on the subject is defective. It is very certain that the process of ovulation, consisting in the maturation and dehiscence of the ova, the swelling and rupture of the Graafian follicles, is liable to be disordered. It is natural to infer that the disorders in question should be accom-

panied with, and give rise to, pain and suffering of various kinds. Thus the rupture of a Graafian follicle may be impeded by presence of undue thickening of its external tissue, due to inflammation of the ovary generally, or of the particular follicle itself; or the distension of the follicle prior to rupture may be greater than usual; or the ovary may be unusually sensitive, and, the physical phenomena being normal, the extreme sensibility of the patient renders the natural process unusually painful.

Dr. Farre,* speaking of ovaritis, makes some remarks which are specially interesting in reference to the question under discussion. After alluding to the difficulty experienced in ascertaining how far pain and tenderness about the ovaries are to be regarded as evidences of inflammation of the organ, he says: 'There can be no question that the cause of much of this suffering is to be looked for in the changes which the tissues of the ovary undergo in the act of expelling the ova.' The changes in question are closely allied to inflammation. 'It is probable,' says this author, 'that when the follicle or the entire ovary becomes tense from the effusions which have been shown to have taken place ordinarily within it, and this tension is not relieved because rupture does not occur at the proper time, so that *ovulation is disappointed, or is aberrant*, the symptoms which might be expected to accompany such an interrupted process would be those which are usually set down as indicating inflammation in a part.' To this abortive or interrupted ovulation may be referred, Dr. Farre believes, the commencement of many morbid conditions of the ovary; and he rightly insists on the necessity for a closer examination of the natural or deranged functions of the ovary, as a better basis for the study of ovarian pathology.

Negrier,† who has devoted special attention to the subject of ovulation and its relations to menstruation, speaks of the affections of the Graafian follicle capable of giving rise to actual ovarian disease, under the term 'vesiculites.' Negrier apparently comprehends under this term the class of cases which Dr. Farre characterises as cases of abortive or interrupted ovulation. There appears to be a necessity for the admission of some such term into the nomenclature of menstrual disorders, by which shall be understood painful ovulation. The term above used, 'ovarian folliculitis,' seems

* *Cycl. of Anat and Phys.*, article 'Uterus,' p. 576.

† *Recueil des Faits pour servir à l'histoire des Ovaires et des Affections hystériques de la Femme*, Angers, 1858.

unobjectionable. Several cases are related by Negrier in which there appeared to be evidence of the existence of disturbance in the process of ovulation, such as would come under one of the categories above described; and we are certainly very familiar with them in practice.

General Abdominal Congestion, Derangements of Digestion, &c.—Women who are the subjects of chronic uterine disease of various kinds, and who habitually experience more or less pain in the pelvic organs, naturally suffer more at the menstrual periods. Those who have a congested, overloaded condition of the abdominal viscera, suffer more at the menstrual periods than others. A sedentary or a too luxurious mode of life rarely fails to give rise to the congestion in question. Derangement of the digestive organs to a marked extent is usually present under such circumstances.

In cases where the patients are of an *hysterical* tendency, ‘nervous,’ and excitable, pain during menstruation is generally one of the most troublesome symptoms. So again, in cases where there is a neuralgic habit, the patient appears to have *uterine or ovarian neuralgia*, and it is not unfrequently observed that the same individual suffers at one time from face-ache, at another from uterine pain. In such cases the pain is often greatly increased during menstruation.

Dr. Gooch, Sir Charles Locock, Dr. Dewees, and Dr. Rigby have called attention to the existence of the *rheumatic diathesis* as predisposing to menstrual suffering. The patient afflicted with this ‘rheumatic’ form of dysmenorrhœa is liable to migratory pains in different parts of the body, more especially in the joints; there is a loaded condition of the urine from excess of uræa, lithic acid, and lithate of ammonia. Flatulence and hæmorrhoidal congestion are also usually present in such cases.

Thus, to sum up these remarks on the nature of the pain felt at the menstrual periods.

The pain may be due to retention of menstrual fluid, which retention may be either partial or complete. That is to say, there may be a slight discharge, but, the aperture of escape being insufficient, there is still really retention present—partial retention; or, the patient being, for a variable time, without discharge of any kind, the case is one of complete retention.

The pain may be due to congestion of the uterus, to congestion of the ovaries, to inflammation of the Graafian follicles coincident with ovulation, or simply to neuralgia.

These two classes of cases glide insensibly one into the other, it is true. Obstruction, when present, gives rise to congestion, to inflammation, to suffering of neuralgic character; and, *vice versâ*, the congestion or inflammation of the uterus leads to obstruction in the manner already pointed out. But, admitting all this, it is nevertheless important that we should in practice determine not merely the starting-point of the mischief, but the present cause of the suffering of the patient; and it appears to be the fact that this is, in the majority of cases, associated with partial or complete retention of menstrual fluid.

*Diagnosis of the Seat of the several Varieties of Pain
accompanying Menstruation.*

We may now, with the aid of the foregoing considerations, pass on to the diagnosis of the seat of the several varieties of pain, &c., present during menstruation.

The diagnostic distinctions between cases of dysmenorrhœa in which there is partial menstrual retention, and those in which there is no such impediment to the escape of the menstrual fluid as to produce this state of things, are the following:—In partial retention, the pains are situated in the uterine region, and radiate from this point to the back and loins; they may be, and generally are, very severe, more or less paroxysmal in character, resembling, though on a small scale, the pains of labour, and often go on increasing in intensity until relieved. Coming on suddenly, lasting for a certain time, and then going off, to return again after a few minutes or after a longer interval—such is the character of the pain. The patient may not be entirely free from pain throughout; but the occasional, it may be periodic, exacerbation—this it is which characterises it. When the pain is excessive, it may induce disturbances of the nervous system of various kinds—hysteric convulsions, agitation, anxiety, palpitations, tenesmus, pain in micturition, &c. The pain differs from that present in the other description of cases: it is more severe and more limited to one spot. When there is no retention, the pain may be situated in the uterus, but more generally it is referred to the ovarian regions, deep down behind one or both groins, and it usually extends from this spot down the thighs. It may extend to the loins also. In menstrual retention there may be pains in the back, thighs, &c.; but it is not limited to these parts, and there is also pain in the uterine region.

The 'ovarian' pain is described by Dr. Rigby as being 'of the most agonising character, frequently attended with severe nausea or obstinate and most distressing vomiting; in its peculiarly unbearable character resembling the sufferings from orchitis.'* It is more frequently, however, less severe than this; and there may be observed all gradations of the same. In cases of simple ovarian dysmenorrhœa, it is most commonly the case that pains of analogous character are present during the intervals between menstrual periods. A more exact analysis of the cause and origin of pains due to uterine disease will be found further on.

As long as the menstrual discharge continues persistently, the presence of pain need not generally give rise to uneasiness, although, as previously observed, it by no means universally follows that, because there is a discharge, the size of the outlet is sufficient. It is the absence of the discharge coincidently with presence of the kind of pain above alluded to, which should make us suspicious of the existence of some obstruction, and more especially when the symptoms in question have been present for any considerable time, or have shown themselves recently in an individual known to have previously menstruated easily and regularly.

When, from the nature of the symptoms present, we are led to believe that there is a mechanical difficulty of some kind, in order to ascertain the nature of this supposed difficulty it will be necessary to make a vaginal examination, and in certain cases to use the sound.

In those cases in which the dysmenorrhœa is connected with the discharge, from time to time, of a membrane from the interior of the uterus, the presence of the membrane itself will so far remove all obscurity from the diagnosis.

When there is painful menstruation, the discharge appearing scantily, disappearing for a time, then reappearing, perhaps in gushes, and again ceasing—when this condition of things is noticed at successive menstrual periods, it gives ground for the suspicion that there is some difficulty in the escape of the fluid. When coagula having the form of casts of the uterine cavity, or a portion of it, are passed under such circumstances, this is also in favour of the presence of mechanical obstruction. Fibrous tumour, polypus, flexion or version of the uterus, pressure of ovarian tumours, hypertrophy of the cervix, &c., may be the cause of this obstructive form of the affection.

* *Op. cit.* p. 33.

It is important not to mistake abortion for dysmenorrhœa, and *vice versâ*. In the case of abortion, there has been suppression of the menses for one or more periods; but in dysmenorrhœa there have been usually preceding attacks of similar character, and no suppression of the menses has been (usually) observed. When there has been partial retention of the catamenial fluid, clots are often observed to be passed, accompanied with contraction of the uterus and pains quite identical with those of labour; and in such cases very careful examination of the substances discharged may be necessary to enable us to distinguish their nature.

In one case which recently came under my observation, the expulsive pains, such as those described above, were present at particular menstrual periods; and it appeared, on enquiry, that they were due to the presence of a clot of blood in the vagina, the escape of which was rendered difficult by the circumstance of the orifice in the hymen being rather smaller than usual. Under ordinary circumstances, the aperture in question was sufficient for the escape of the menstrual product. That complete retention occasionally results from imperforate hymen is well known, but this latter class of cases belong to a different category altogether from those of which the case just related is an instance.

(B) PAIN EXPERIENCED IRRESPECTIVE OF MENSTRUATION.

There are very few cases of 'painful' menstruation in which there is not also pain or discomfort of various kinds between the menstrual periods, these latter symptoms being due to certain morbid conditions of the uterus or adjacent organs. And the inter-menstrual suffering is very frequently directly dependent on the abnormal performance of that function. Further, while menstruation itself is attended with pains which are in a manner peculiar to it, these very pains are not limited absolutely to this period, but may occur at other times. Correspondingly, there are other kinds of pain and inconvenience which may be experienced equally during menstruation and at times when menstruation is not going on.

The pains or painful sensations experienced by the patient, and which are referable to the generative organs, are exceedingly numerous. They vary in degree; they vary in position; there is not a constant relation between a particular cause and a particular effect. Nevertheless, the pains experienced by the patient are data which can be generally usefully turned to account in the

that a feeling of pain at a particular spot is not always indicative of lesion or of appreciable change at the spot in question. The pain is frequently what is termed a 'reflected' pain; at other times it is produced by pressure on the trunk of the nerve supplying the painful part. In the diagnosis of the nature and cause of a particular pain, the first thing to be done is to determine whether the locality of the lesion be identical with that of the pain; and if this question be decided in the negative, it must be further ascertained whether the pain be a reflected one, or due to pressure on the nerve supplying the part.

It very frequently happens that pains of all three kinds exist simultaneously. Thus a fibrous tumour growing in the wall of the uterus may give rise to pain of the three varieties above mentioned, viz. pain in the uterine region itself, pain in the back—the reflected pain—and pain in the lower extremities; the latter due to the pressure of the enlarged uterus on the sacral plexus within the pelvis. So also an ovarian tumour may give rise to pain in the pelvis, to pain around the hips or back, and to pain in the thigh, or leg, or foot.

Pains not situated within the pelvis may be, therefore, either reflected pains, or what may, for the sake of convenience, be termed *pressure* pains.

On the subject of 'reflected' pains due to disorders of the uterus and vagina, Dr. Snow Beck, in some papers published not very long ago, has made some interesting remarks.*

The seat of the pains produced by disease of the uterus or vagina varies, according to Dr. Beck, with the location of the disease. 'When the cervical portion of the uterus is the seat of the disease, the pains are felt in the lower lumbar region—generally through the lower two-thirds of this region—and extending round the hips, above the crista ilii and a little over these bones, frequently accompanied with a sensation of weight, and thence down the sides of the abdomen to the iliac, inguinal, and hypogastric regions, and into the anterior and inner part of the thighs. . . . When the middle portion of the uterus is affected, the pains are situated in the upper part of the lumbar region and lowest part of the dorsal region, and extend from thence round the upper

* 'On the Pathology of the Uterus, its Anatomy and Physiology.' *Medical Times* 1851, vol. xxiii. p. 583.

‘part of the abdomen on a level with and above the umbilicus. And when the fundus of the uterus is the seat of the disease, the pains are found in the middle dorsal region, between the scapulæ, and extend from thence round the sides of the chest in the course of the intercostal nerves.’

Dr. Beck’s explanation of the matter is, that ‘the change produced in the uterus through the disease with which the organ is affected, is reflected, through the medium of the spinal chord, upon the nerves arising from the same parts of the chord, and induces the sensation of pain along the course of these nerves, or, as not unfrequently happens, near the terminal distribution of these nerves.’

Proof of the positions here taken up is, it is argued, afforded by the fact that pressure by the finger on the lips of the inflamed uterus gives rise not only to pain at the part actually touched, but to reflected pains such as those described.

‘When the vagina is the seat of disease, the reflected pains are seated in the sacral region, round the glutei, in the perinaum, down the posterior part of the thighs, in the calves of the legs, and sometimes in the soles of the feet, even to the toes.’ The reflected uterine pain is a ‘tired aching pain;’ the pain reflected, and having a vaginal origin, is a ‘shooting aching pain.’

When both the uterus and vagina are affected, the two series of reflected pains may be met with together. When the uterus becomes enlarged from any cause, and presses upon the upper part of the vagina, the pains felt indicate the disease to be in the vagina, whereas it is really in the uterus; and the same thing may happen when the uterus, not enlarged, is unduly pressed downwards. The pain produced under such circumstances is the ‘broken-back pain,’ and it is always notably relieved by the recumbent posture.*

The affections of the uterus and the vagina only are included in Dr. Beck’s account of the causes of reflected pains. To complete the account of the reflected pains due to disorders of the generative organs, it is necessary to include the disorders of the ovary. Irritation or inflammation, or other disease of the ovaries, may give rise to reflected pains, the seat of which may be the loins, the hips, and upper part of the thighs; the ovaries deriving their nervous supply from the same source as the uterus, the reflected pains will be seated in nearly the same parts. In the estimate of the causes of reflected pains now under consideration, the disorders of the bladder should also not be forgotten.

* *Loc. cit.* p. 651.

There is a class of pains referable to the generative organs which is not described by Dr. Beck, viz. the 'pressure' pains. These latter pains are, however, very frequently observed, and some of the pains included in Dr. Beck's account appear to be pains due to pressure, rather than reflected pains.

Admitting, therefore, for the most part, the accuracy of Dr. Beck's analysis of pains referable to the uterus and vagina, so far as the 'reflected' pains are concerned, it is necessary to give some more particular account of the other variety of pains—those due to pressure within the pelvis.

The nerves which are most liable to suffer from pressure within the pelvis are those issuing from the anterior foramina of the sacral bone, which enter into the formation of the sacral plexus, and which supply also branches to the pelvic viscera. A tumour occupying the pelvic cavity may compress any one of the nerves in question. The nerves for a short distance lie close against the sacral bone, only separated from it by the fibres of the pyriformis muscle, and they may, during this part of their course, be compressed by a pelvic tumour against the hard surface of the bone in question. The nerves which are given off from the sacral plexus are, many of them, sensory nerves, and the effect of pressure on these nerves within the pelvis is therefore to produce pain in the skin supplied by the particular nerve so pressed upon. The following are the localities which may be affected in the manner above described:—the hip-joint, the labia pudendi, the clitoris, nymphæ, perinæum, the back of the coccyx, the upper part of the inside of the thigh, the back of the thigh below the gluteus maximus, the leg, and the foot. The upper portion of the labia, and the portions of the skin or other parts of the lower extremity not included in this list, are supplied by branches of the lumbar nerves; these latter nerves are not liable to pressure from tumours situated in the pelvic cavity—that is to say, when such tumours are confined to that cavity alone.

Here it is necessary only to state, that in practice we frequently meet with cases in which enlargements or tumours of various kinds within the pelvis give rise to pains seated in the parts supplied by the nerves which emerge from the sacrum, and which supply the parts above enumerated.

The foregoing observations have certain obvious important applications in diagnosis, but it is not in the nature of things that any great regularity should be observed in the relation subsisting

between location of lesion and location of pain thereby produced, many circumstances being likely to modify or affect the result in particular cases.

We may now proceed to point out the conclusions which may be drawn, from the presence of pains of various kinds, as to the nature and seat of the disease or disordered condition with which the patient is affected. And for this purpose it will be convenient to consider (1) the pains seated in the *back*, (2) those felt in the *hypogastric region*, and (3) those felt in the *lower extremities*.

PAIN IN THE BACK

is one of the most common symptoms present in women labouring under uterine or allied disorders; it is also the one to which attention is directed, and of which special complaint is made, by the patient. The pain here alluded to more usually affects the lower dorsal and the lumbar regions and the parts adjacent; it is not usually an acute pain, but an ill-circumscribed, aching sensation, very wearying, and often extremely distressing to the patient. The intensity of this pain is not by any means proportionate to the severity of the disease present. Women suffering from uterine disorder, combined with constitutional derangement, are liable to this pain in its most troublesome form, of which we have a very marked instance in cancer of the uterus, giving rise to long-continued menorrhagia and consequent anæmia.

Pain in the back is not necessarily indicative of disease of the generative organs, but the fact that a patient has for a considerable period suffered from pain of this description should induce the practitioner to consider whether disease of the internal generative organs, up to that time possibly overlooked and unrecognised, be not present, and to take measures for satisfying himself on this point. The connection between the pain in question and the presence of internal uterine or other disorder is often substantiated by the fact that before, during, or immediately after the menstrual periods, it is most troublesome; sometimes, indeed, it is only present at such times. The pain of ordinary lumbago is the most likely to be confounded with it. Attacks of lumbago are, however, more acute in character, and they occur irrespective of the menstrual periods. Diseases of the vertebræ, aneurism, diseases of the kidneys, &c., are some not uncommon causes of persistent aching or pain in the back.

PAIN IN THE HYPOGASTRIC REGION.

The hypogastric region is very frequently the seat of pain in women; and, consequently, the diagnosis of the various conditions capable of giving rise to pain in this part of the body is most important. For diagnostic purposes, we may consider: *a.* Intermittent pains; *b.* Pains more or less constant; *c.* Pain of inflammatory character; *d.* Pains, together with symptoms like those of perforation; *e.* Hysterical pain; *f.* Bearing-down pains.

a. Intermittent Pains.

Of all the pains which women experience in this part of the body, the most characteristic and most interesting, from a diagnostic point of view, are those pains which may expressively be termed *labour-like pains*. The pains in question are peculiar in their nature; they come on in paroxysms, lasting a certain time, and leaving the patient pretty free during the intervals; and they are due to contractions of the uterus, generally excited by the presence of some body, substance, or fluid, within this organ. When, therefore, a woman is found to be suffering from pain in the hypogastric region, which possesses the characteristics pointed out, we generally set it down to the presence of uterine contractions. Under certain circumstances, it appears that pains very closely resembling these may be produced by the contractions of the vaginal wall itself, as in cases of clots of blood or foreign bodies in this canal. In most of these cases, uterine contraction is associated with the vaginal contractions in such a way that the latter element in the phenomena is unrecognised.

The typical 'labour-pain' is that observed during parturition at full term. Here the uterine contractions are most severe and most powerful, owing to the great size the organ has then attained. In the case of a woman in labour at full term, it is not generally a question as to whether she be pregnant or not; the diagnosis has usually been made previously, and in other ways. It is necessary, however, to regard attentively the phenomena then observed, in order to be in a position to detect and recognise the presence of pains of the same nature when they are less severe and intense in degree, and consequently more liable to be confounded with other kinds of pain.

The principal conditions under which labour-like pain may be observed will now be mentioned.

In *women who have never menstruated*, the presence of hypogastric pain of the kind in question would make us suspect closure of the hymen, of the vagina, or of the os uteri, and that the menstrual fluid, although secreted, could not be expelled. In cases of this kind, the pains at first felt are slight in degree; but as month after month passes without relief, they become more severe, and are finally of the most intense character. The enlarged uterus is usually then to be felt above the pubes.

In *women who have menstruated*, the presence of hypogastric pain, recurring at intervals, sharp while it lasts, and leaving the patient free from pain in the intervals of the paroxysms, would give the idea of the presence of *abortion*. This idea would be substantiated, or the reverse, by the collateral evidence obtainable. If the patient had passed over one or more periods without menstruating as usual, and if the pains above described were accompanied by a discharge of blood from the vagina, this would render the suspicion of abortion so strong as to necessitate not only an examination *per vaginam*, but also a careful inspection of the matters discharged. Great caution should be exercised in expressing any conclusion on such a question, and a conclusion is only possible after a careful scrutiny of the facts elicited.

In abortion occurring before the third month, the collateral facts do not so unmistakably point out the nature of the case as in instances of abortion occurring later. Respecting an abortion taking place at four, five, or six weeks, for instance, it would be exceedingly difficult for the practitioner to affirm positively that the case was one of abortion, unless he were fortunate enough to secure the ovum itself.

Menstrual Retention occurring subsequently to more or less regular performance of the Menstrual Function.—In these somewhat rare cases, labour-like pains may be present. These cases only differ from those alluded to in previous pages (see ‘Pain during Menstruation’) in this, that the secretion escapes with difficulty in the one instance, and does not escape at all in the other. The pain is alike in both, and the other attendant phenomena are almost identical.

In cases of *Peri-uterine Hæmatocele*, labour-like pains are usually observed. They either precede the occurrence of the hæmorrhage, or are produced by the presence of the hæmorrhagic effusion in the pelvis. In a patient who has, for a longer or shorter time, presented symptoms of menstrual retention (of which these labour-like pains form an important part), and who suddenly,

at a menstrual period or at another time, becomes affected with symptoms of internal hæmorrhage, the occurrence of peri-uterine hæmorrhage is to be suspected. Where the hæmorrhage in question has occurred, the pressure of the tumour thereby produced gives rise to labour-like pains, to difficulty in micturition, defæcation, &c.

Presence of Blood-clots, Fibrous Polypi, retained portions of Placenta or Fœtal Membranes, Degenerated (e.g. Hydatidiform) Ova, within the uterus, may give rise to labour-like pains, consequent on the attempt of the uterus to expel the bodies in question. In these cases, the pains are more or less irregular in regard to the time of their occurrence, and they do not affect different individuals equally. The uterus appears, indeed, to be very capricious in regard to tolerance of the presence of bodies within it: large polypi are sometimes found in the uterus, which have given rise to comparatively little pain; while, in other cases, the patient may have been tormented almost daily by severe colic-like pains in the hypogastric region from a comparatively small growth of the same nature.

Tumours growing in the Substance of the Uterus.—Of these, the fibroid tumour, which is the most common, is a frequent source of pains of the kind now under consideration. In cancer of the uterus, labour-like pains are frequently present, especially at an advanced stage of the disease; and they depend partly, in all probability, on uterine contractions excited by the disease, but partly also on the presence of the coagula which frequently form in the uterine cavity under such circumstances.

Collections of Puriform or other Fluid in the Uterine Cavity.—In women suffering from chronic disease of the cervix uteri, when the canal of the cervix is not so large as to allow a free passage of the fluid secreted; in women advanced in life, and in whom the atrophied condition of the uterus produces also contraction of the canal, the uterus sometimes becomes distended with serous or puriform fluid, and labour-like pains supervene.

In cases of *Flexion of the uterus*, when the uterus is so twisted as to interfere with escape of its contents, also in cases where the uterus is *dislocated* from its normal position by presence of tumours in the ovaries, &c., these labour-like pains are frequently noticed.

Cases of *Difficult Menstruation* in which we have hypogastric pains of this character have been already and specially considered (pp. 119 *et seq.*). It will generally be found that, in cases where

labour-like pains are present at irregular times and periods, there is also disturbance of the function of menstruation.

Intestinal Irritation, e. g. Dysentery.—Pains due to this cause, and simulating the labour-like pains above described, may give rise, at all events at first, to obscurity in the diagnosis. Thus, recently I was called to a lady recovering from the effects of her lying-in, who had been suddenly seized with paroxysms of pain in the uterine region, faintness, and depression—the pains so closely simulating the labour-like pains just spoken of, that it was considered likely that the uterus was endeavouring to expel a retained coagulum. A few hours later, however, some well-marked dysenteric stools were passed, and it became evident that the pains in question were seated in the intestine. The pains produced by lead-poisoning, and known as *colic*, could hardly be confounded with those of uterine origin.

Neuralgia of the Uterus.—In a lady whom I have attended for some years, the subject of occasional severe neuralgia, the neuralgia is frequently accompanied by what she herself terms ‘labour-pains.’ The pains in question are temporary, and subside when the neuralgia has located itself elsewhere. Cases where such pains are more persistent are described by various authors as *rheumatism of the uterus*.

b. Pains more or less constant.

These may occur in all degrees of intensity, and the causes of the same are so numerous as almost to defy classification.

Pain in the hypogastric region may be due to some abnormal condition of the uterus, or of the bladder, or of some other of the pelvic viscera. The pain due to abdominal disease is usually situated higher up, about the umbilicus. And although these limits are not always observed—although pelvic disease may occasion pain even higher than the umbilicus—and, *vice versâ*, although abdominal disease may occasion pain in the hypogastric region, yet the rule just stated generally holds good.

Some of the more salient points as to the diagnosis of the causes of the pain experienced may now be mentioned. The cases in which the pain is of a more or less chronic character, and unattended with symptoms indicative of inflammatory conditions, are those now to be considered.

In *Cancer of the Uterus*, severe hypogastric pain, which is generally remittent in character, accompanies almost constantly the

more advanced stage of the disease; whereas, at an earlier period in the history of the affection, the pain is not so severe, and is more generally situated in the back. The 'lancinating' pain which has been considered by some authorities as an early sign of cancer is 'a sudden sharp burning dart of neuralgic severity, always proceeding from one spot, and sometimes transfixing the whole pelvis' (Rigby). It would be wrong, however, to rely on this sign alone as diagnostic of cancer, for pains having this character are occasionally present in non-malignant affections, and, indeed, in cases where there is no tangible disease at all. But when hæmorrhage, offensive discharges, and pain of the kind now described are all present together, a careful physical examination of the uterus is necessary; for there is a presumption that the case is one of cancer. In cases of corroding ulcer of the os uteri, these symptoms are also present; emaciation and fever are also common to both. The pain in cancer is usually more acute than in that of corroding ulcer. An observation which applies to both is, that hæmorrhage and pain are sometimes entirely absent. In cauliflower excrescence of the os uteri, really a form of cancer, there is generally a complete absence of severe pain for some time after the disease has commenced. The pain due to cancer frequently arises from local attacks of peritonitis.

In *Fibrous Tumour of the Uterus*, severe hypogastric pain may be present. The foul discharge is not present as in cancer, although this is a rule open to rare exceptions; but there may be profuse occasional loss of blood. The pain due to fibrous tumour may be quite as severe as that in cases of cancer.

Another cause of hypogastric pain is that condition of the uterus known since the days of Dr. Gooch as the *irritable uterus*—a neuralgic, or a neuralgic and inflammatory, condition of the organ.

Dr. Ferguson* believes that the irritable uterus is a disease more particularly observed where there is an hereditary taint of gout or rheumatism, or where the patient is the offspring of very nervous parents. These cases of irritable uterus constitute a considerable majority of that class of patients who are, occasionally for years together, incapacitated for active life; the principal suffering being pain in the hypogastric region, increased by all kinds of motion, and for the relief of which the patient gradually becomes more and more inclined to maintain persistently the horizontal posture. In cases of this kind which have come

* Prefatory Essay to Gooch's Writings. New Syd. Soc.'s Edition.

under my own observation, the neuralgic element present has been evidenced by the fact that the patient has been affected with well-marked neuralgia of the face, of the temples or other parts, at the same time that the uterine or ovarian pain was present, or in alternation therewith. The neuralgic pains have frequently a characteristic periodicity about them.

Pain in the hypogastric region, perhaps more frequently extending also to one or both ovarian regions, is almost always a most troublesome accompaniment of long-standing *disease of the cervix of the uterus*, where hypertrophy, hypersecretion, and chronic inflammatory conditions are conjoined. Pain due to either of these two latter causes is often very severe; it is much increased by motion, there is great tenderness on pressure, pain on sitting down, &c.

Ovarian Pain, referable to the ovaries, and situated deep down in the inguinal or iliac region, is rather commonly observed. The presence of pain in this region is not to be considered as diagnostic of any one condition in particular. Like the lumbar pain, or the hypogastric pain, pain in this situation may proceed from a vast number of causes. Bernutz and Goupil consider that inflammation, analogous to that witnessed in orchitis in the male, frequently affects the peritoneal membrane in the neighbourhood of the ovaries. Pelvi-peritonitis plays, according to these authors, a very important part in the diseases of women; and, if these views be correct, the pains frequently experienced by women in the ovarian region may be connected with the presence of the inflammation in question. A careful examination of the facts on which the conclusions of Bernutz and Goupil are founded, shows that inflammation is certainly more common in the region of the ovaries than has been generally admitted, although it has yet to be shown that it has so important a place in pathology as these authors would lead us to believe.

Dr. Tilt has collected a valuable series of facts relating to 'ovaritis' in his work 'On Uterine and Ovarian Inflammation;' he is of opinion that ovaritis of a sub-acute form very frequently occurs. Dr. Tilt also considers pelvi-peritonitis a common affection.

By Dr. Churchill, pain in the ovarian region is regarded as evidence of 'ovarian irritation;' by Dr. West it is considered 'neuralgic;' by Dr. Henry Bennet it is looked upon as the result of inflammation of the cervix uteri.

Dr. West states that his 'own impression is, that a larger share

has been assigned to chronic inflammation in the production of these symptoms than can be proved to be really due to it.* The opinion of Dr. West is one supported by various pathological considerations. Thickening, hypertrophy, or enlargement of the ovaries, such as would be expected to be found as a result of inflammation, are not common in proportion to the frequency of the pain felt during life. In the ovaries of women of middle age, we find that, so far as the pathological appearances go, there is nothing enabling us to distinguish between two cases in the one of which there may have been symptoms (pain, &c.) ordinarily set down to ovaritis, and in the other of which no such symptoms have been experienced.

It is remarkable, in those cases where the ovary becomes affected with structural disease (as in the case of cystic disease), how very generally there is an almost complete absence of pain in the ovary affected at the time when most pain would be expected—viz. at the commencement of the affection. This and other facts would appear to lend sanction to the view that pain in the ovaries is often dependent on exaltation of nervous sensation in the affected parts, rather than on inflammation, or at all events on appreciable local changes. So far, therefore, there is, or appears to be, wanting, proof of frequency of inflammation of the substance of the ovary itself.

There is very great difficulty, however, in separating the physiological from the pathological series of facts, and this accounts for the diversity of opinion existing on the subject of chronic ovarian inflammation. In previous pages (126-7) allusion has been made to certain conditions, probably of inflammatory nature, of the Graafian follicles, associated with presence of pain during menstruation; and reasons have been given for admitting what has been termed 'ovarian folliculitis' into the nomenclature of disorders of the ovary. The process of ovulation, when disordered, may produce pain at menstrual periods, and when this is the case the inter-menstrual periods are rarely quite free from suffering, the pains then felt being of a somewhat analogous kind. In this sense of the word, therefore, and limiting it to changes occurring in individual follicles, we may admit the frequency of chronic ovaritis.

If the generative organs be habitually the seat of congestion, for instance, ovulation is disturbed, possibly retarded, and the

* *Diseases of Women*, 2nd ed. p. 474.

changes in the follicles are accomplished with greater difficulty. Chronic uterine congestion or inflammation is, under such circumstances, a cause of pain in the ovarian regions, and the latter may be cured by relief of the former affection.

Ovarian Pain from Sexual Irritation.—Undue sexual irritation in the male is accompanied by aching and pain in the testicles. This pain seems to be comparable with the sort of pain—not rarely a source of great and continuous suffering—which is observed in the other sex, and which is referable to the ovary.

Another cause of ovarian pain, to which attention has been directed by Bernutz, and in this country by Mr. de Meric,* is gonorrhœal infection. An inflammatory action appears to be set up in the ovary, or in the peritoneal membrane near the ovary, in some cases of gonorrhœa, analogous to the orchitis witnessed in the male.

The late Dr. Rigby described a peculiar pain felt in the pelvic region as being indicative, together with other signs, of a displacement—a kind of prolapsus of the ovary. The pain alluded to is ‘a peculiarly sickening pain about the sacral region, extending to one or other of the groins, and coming on in paroxysms of such agonising severity as to render the patient frantic with the intolerable suffering.’† The pain is greatly aggravated by passage of the fæces; the part in the vagina corresponding to the ovary is tender to the touch. ‘It bears a close resemblance to the intense and peculiar sufferings in a case of orchitis.’ Further, says this author, ‘the menstrual periods are always attended with greatly increased suffering.’ Now, it appears doubtful whether the ‘displacement’ which Dr. Rigby assumed to occur in these cases has a substantial existence, the symptoms and the signs being all explainable without recourse to a displacement theory at all. The pain above described is susceptible of other than a mechanical explanation: the ovary is enlarged under these circumstances, and may consequently be more readily felt from the vagina or rectum; but this is no proof of the existence of displacements in the ordinary sense of the word. In the view of the matter which facts have induced me to take, I have been anticipated by Dr. West.‡

We may conclude that pain in the ovarian region may be produced by chronic congestion of the uterus and its appendages;

* *Lancet*, June 14, 1862.

† *On Diseases of Women*, p. 278.

‡ *Op. cit.* p. 480.

by inflammation of the follicles; that it is frequently observed in cases where the cervix uteri is the seat of chronic enlargement or inflammation; that it may be caused by displacements of the uterus and dragging on the ligaments; that it is now and then witnessed in connection with undue sexual irritation. It is not rarely present as a simple neuralgia, the ovary presenting a condition analogous to that witnessed in the 'irritable' uterus; and, like it also, this neuralgia of the ovary may be associated or not with some constitutional disturbance—anæmia, rheumatic or gouty diathesis. It may be found, as Bernutz has shown, to be dependent upon inflammation of the peritoneum in the neighbourhood of the ovaries, which inflammation may go on to suppuration and abscess.

Disease of the Bladder.—Pain more or less persistent, and of a dull aching character, is observed where the bladder is inflamed—*cystitis*—the symptoms varying according to the intensity of the inflammation present. The function of micturition is always disordered in such cases, there being generally great irritability of the bladder, and consequent frequent and painful micturition. The cystitis may be idiopathic, it may be secondary to diseases of the uterus, or it may be due to *malignant disease* situated either in the uterus or in the walls of the bladder itself. In some cases the sufferings experienced by the patient, and due to the presence of cystitis, are very severe. As a rule, the disturbances in the function of micturition, associated with this disease, render the diagnosis of the affection easy, but the presence of the disturbances in question does not necessarily point to the conclusion that the bladder is actually inflamed. (See p. 100.) The condition of the urine itself should be carefully enquired into, there being usually a large quantity of ropy mucus present in cases of cystitis.

c. Pain of Inflammatory Character.

Under this head are included all cases in which the ordinary signs of inflammation are present—pain, more or less acute in character; heat and throbbing; tenderness to the touch (which is to be distinguished from that very extreme tenderness met with in hysteria); feverishness; quickness of pulse; &c. These symptoms are often preceded by the occurrence of a rigor. They indicate inflammation of the uterus, of its peritoneal covering, or of some of the adjacent viscera or their coverings; and they are most commonly the consequence of labour, of abortion, of sudden dis-

turbance of the menstrual function, or of operations about the genital organs. A frequent result in such cases is formation of *pelvic abscess*. The presence of pain in the pelvic region, with general *malaise*, in a woman recently subjected to any of the foregoing influences, should excite particular attention. (See 'Examination of the Vagina.') Hæmorrhage into the peritoneal cavity, from whatever cause, may give rise to severe peritonitis. The blood coagulates, effusion of lymph takes place, false membranes are formed over it, and pain of inflammatory character is under such circumstances observed. Additional remarks on the symptoms noticed in these cases will be found further on. An important class of cases are those in which inflammatory action is set up in the interior of ovarian cysts. In a woman the subject of ovarian dropsy, sudden access of pain of this kind would excite suspicion that inflammation of the cyst was present. Acute inflammation of the bladder is a condition giving rise to presence of hypogastric pain of the kind now under consideration.

It seems hardly possible to fail to recognise the inflammatory element in cases presenting the foregoing symptoms. The error most liable to be committed is that of taking for inflammation what is only an hysterical condition. As a rule, hysterical pain is marked by its severity, by its variability, by the suddenness with which it appears and disappears, and by the circumstance that the patient is known to be hysterical, or to have been the subject of hysteria. The condition of the pulse is the best criterion. In cases otherwise closely simulating actual peritonitis, or inflammation of the uterus or of the adjacent organs, the frequency of the pulse present in the latter affections is wanting.

An important class of cases are those in which

d. Pain of an Acute and Intense Character is suddenly felt in the Hypogastric Region,

accompanied by great prostration, and depression and shock to the system generally. Fainting, continuing for a considerable time and frequently recurring, great pallidity of surface, cold clammy perspiration, weakness or almost complete absence of pulsation at the wrist, a feeling of sickness or violent and uncontrollable vomiting, are symptoms often witnessed in this class of cases. To these is usually added considerable swelling of the abdomen.

The symptoms in question are such as to excite suspicion of

perforation or rupture of some of the abdominal or pelvic viscera, with consequent escape of blood or contents of the ruptured viscera into the peritoneal cavity, or rupture of an abscess and effusion of pus into the peritoneum, from bursting of an ovarian cyst, &c.

It is very necessary to distinguish these really alarming cases from a class of cases already alluded to, and which in certain respects may simulate them—those of hysterical origin. The severity of the pain is, by itself, of not much value from a diagnostic point of view. In hysterical cases, there is an absence of symptoms of depression and prostration; and there is, moreover, generally evidence of previous hysterical attacks, or, accompanying the severe hypogastric pain, there are other unmistakable signs pointing to hysteria—the feeling of fulness and rising in the throat known as ‘globus,’ slight convulsions, &c. On the other hand, in the really serious cases, the patient has been previously in a state of good health, or at all events free from attacks of hysterical character, and the positive signs of great perturbation of the system only require to be looked for to be detected.

Further, examination of the abdomen gives valuable information. In hysteria, there is, together with the pain, great sensibility of the surface, the slightest touch giving rise to complaint, whereas deep slowly increased pressure is not painful: the reverse is true of the class of cases now under discussion. It is only at the onset of the attack that there is any possibility of confounding the perforation symptoms with those produced by hysteria.

The conditions which may give rise to the alarming symptoms above described will now be enumerated.

The pain may be produced by an affection of the abdominal or of the pelvic viscera, and there are no signs by which it can be absolutely determined at the moment whether the seat of the accident be in the abdomen or in the pelvis proper. The concomitant circumstances generally enable us to decide this point, or the course of the case determines the diagnosis in this particular.

In *Perforation of the Intestine*, as from typhoid fever, from tuberculous ulceration, or connected with organic disease of the abdominal viscera, &c., the previous history would generally suggest the proper interpretation of the symptoms; and the pain is more usually, perhaps, referred to the umbilicus, or a point above it, than to the hypogastric region.

Certain conditions of the pelvic viscera, especially, are capable of giving rise to the symptoms in question. The following are the most important of these:—

Pelvic Hæmorrhage from the Ovaries, Fallopian Tubes, &c.; including Cases of Peri-uterine Hæmatocele.—In the more ordinary cases of ‘hæmatocele,’ the effusion of blood takes place either into the pelvis within the peritoneal cavity, and from the ovary or from the Fallopian tubes, or into the cellular tissue beneath the peritoneum covering the uterus, broad ligaments, &c. The accident mostly occurs during or immediately after the occurrence of a menstrual period. It may happen in women previously healthy, but is more generally observed in women who are anæmic, and in whom there have been menstrual irregularities. Walking a long distance, straining, the act of intercourse, or sudden muscular effort, may precede the attack; it may occur also without such apparent exciting cause. The symptoms observed in such cases vary in degree of intensity; there are reasons for believing that, in a slight form, the accident is rather common, and, the symptoms being less severe, its true nature escapes recognition. When symptoms of the above kind occur in an intense degree, and in a woman who has been subjected to the foregoing influences, it may be suspected that they are due to a sudden outpouring of blood. The diagnosis is established by recognising the presence of a semi-solid tumour above the pubis, or pressing on the vaginal walls—the effused blood—such tumour having been before wanting.

Hæmorrhage in Extra-uterine Pregnancy.—A hæmatocele—which is an effusion of blood in the neighbourhood of the uterus—may be due to causes unconnected with pregnancy; and, indeed, this is generally the case. But there is an important class of cases, in which an outpouring of blood takes place in connection with pregnancy, and more particularly with pregnancy of an abnormal kind—extra-uterine pregnancy. The hæmorrhage due to extra-uterine pregnancy may give rise to the formation of a tumour in the pelvis, of the same kind as that witnessed in pelvic hæmorrhages of other kinds.

Cases in which the ovum is situated in one of the Fallopian tubes frequently occasion symptoms having the character of those described, and in a very intense degree; the suddenly occurring violent pain and the extreme degree of syncope being the most significant. Here the patient is usually known or suspected to be pregnant. There may have been nothing about the case to excite particular attention; but more generally the woman has experienced unusual pains, or more discomfort than in ordinary pregnancy. Slight occasional losses of blood are frequently observed

in these cases of extra-uterine pregnancy, which are under such circumstances, often mistaken for return of menstruation. The rupture occurs in the third or fourth month, or earlier in the majority of cases, when the ovum is in the Fallopian tube; it is rare that it is postponed much later than this. On the other hand, the time of rupture may be considerably later than this, if the ovum be attached just without the tubes, or in the abdominal cavity itself; and there may be no rupture at all, the pregnancy going to full term, with further results, which need not be particularly alluded to in this place. Rupture of the foetal-containing cyst generally occurs when the foetus is developed in the Fallopian tube; but in cases of extra-uterine pregnancy of the 'abdominal' kind, rupture is, on the contrary, rare. The hæmorrhage which takes place in cases of extra-uterine pregnancy is generally so great as to kill the patient, and death often takes place very quickly. In some cases, the patient lives longer, and dies apparently from the effect of a succession of hæmorrhages.

Rupture of the Gravid Uterus itself.—There are a few cases on record, in which this accident has happened, and without any very obvious cause. The third, fourth, and fifth months, are the various periods during which this has been observed. The symptoms noticed at the time of the rupture would not essentially differ from those present in rupture of an extra-uterine pregnancy, but the previous history in the cases might be somewhat different.

Rupture of Ovarian Cysts, with escape of their contents into the peritoneal cavity, does not, as a rule, give rise to marked disturbance; in some cases, however, when, concurrently with the rupture, there is hæmorrhage, severe symptoms may be produced, more or less identical with those described; and even without hæmorrhage occurring, the escape of the contents of such cysts may give rise to severe symptoms and death. Thus, in a case recorded by Dr. Gillespie, an ovarian dermoid cyst, containing hair and pus, burst; the pus was effused into the peritoneum, and the case speedily proved fatal. In this instance, the symptoms were, for a few previous days, diarrhœa, occasional vomiting, abdominal pain. These, especially the vomiting, became suddenly aggravated, and death took place in a few hours from collapse. The symptoms closely resembled those due to irritant poisoning.*

e. Hysterical Pain.

It is well known that, in hysterical patients, the pains complained of are occasionally very difficult to distinguish from others of more serious character. The abdomen is very frequently the region in which pain is seated in cases of hysteria. From other pains seated in the hypogastric region, hysterical pains are discriminated by careful enquiry into the history of the patient, where previous occurrence of hysterical symptoms is substantiated, and by the absence of signs of inflammation or mischief of other kinds. The character of the pain offers in itself no conclusive indication, for hysterical pain may resemble in degree and intensity almost all other varieties of pain.

Negrier* believes that the phenomena of hysteria in general depend upon a morbid condition of the ovary—a kind of irritation which is irradiated to the ganglionic system—and that there are certain women of ‘ovarian temperament’ who exhibit the phenomena ordinarily spoken of as hysterical. Negrier apparently bases his conclusion mainly on the fact that a very common symptom in these cases is tenderness on pressure in the ovarian regions, and presence of pain in the regions in question; he classes these cases under the term ‘ovarie.’ There can be no doubt that undue excitation of the ovarian function is occasionally associated with hysteria, and there would seem to be a good reason for the distinction drawn by Negrier between cases in which actual tangible disease of the follicles is present (ovarian folliculitis) and others in which no such tangible disease is met with, and in which there is, nevertheless, evidence of undue excitation of the ovarian function. It is hardly necessary to observe that hysterical phenomena and actual textural changes in the ovaries may be met with together in the same patient.

Hypogastric pain of an hysterical nature may be seated in the ovary itself, but it appears to be not uncommonly seated in the abdominal walls. The muscles of the abdomen are frequently, according to Briquet,† the seat of hysterical pain. It is difficult, however, to ascertain in many cases whether the pain be really seated in the skin, the muscles, or still more deeply. In cases where the pain is of hysterical origin simply, a slight touch gives pain, but deeper pressure is generally borne very well: this is important from a diagnostic point of view.

* *Op. cit.*

† *Traité Clinique et Thérapeutique de l'Hystérie.* Paris, 1859.

Lastly, it should be mentioned that, in hysterical women, presence of pain in the hypogastric region is frequently associated with distension of the bladder and *retention of urine*.

f. Bearing-down Pains.

In women suffering from chronic disease of the uterus, complaint is often made of what are called *bearing-down pains*. They more frequently occur in women who have lost flesh and who are in a bad state of health, and in whom the uterus is diseased. Diseases of the uterus involving enlargement of the organ more particularly cause them. In most cases where bearing-down pains are present, there is partial or complete prolapsus of the uterus or of its cervix. The bearing-down sensation is also present in cases where tumours of the uterus, pregnancy, polypi or fibroid tumours, cancer, &c., exist. It may be due to prolapsus of the bladder. The presence of pains of this character generally points out the necessity for exploration of the uterus from the vagina.

PAIN SEATED IN THE LOWER EXTREMITIES.

It has been already explained (see p. 134) how and why it is that tumours or enlargements of various kinds of the organs within the pelvis may give rise to pains situated in certain parts of the lower extremities. These pains have a mechanical origin, and there is consequently no sign by which we can distinguish, by means of the pain alone, the nature of the substance that is exercising the pressure which is the cause of the pain. The 'pressure' pains are very important, however, in directing attention to the presence of tumours in the pelvis which might be otherwise overlooked. I have several times noticed pain of this kind in *early pregnancy*, and the occurrence of the pain attracted attention to the possibility of the presence of a tumour in the pelvis. In two cases of retroflexion of the uterus, pain of this kind was complained of.

The pain frequently felt at the upper and inner part of the thighs and in the perineal region, in cases of *ovarian tumour*, is an instance of the same kind. Painful cramps are occasionally experienced in the calves of the legs, in cases where pelvic tumours are present. Cramps of this kind are frequently observed in labour, and these appear to be due to pressure of the hard parts of the foetus on the sacral nerves. Pains situated in the anterior and outer parts of the thighs, which regions are supplied with

nerves from a different source, do not indicate presence of a pelvic tumour. To this rule, however, there is an exception occasionally witnessed in cases of *pelvic abscess*, where the tumour rises up above the brim of the pelvis, and gives rise to pressure on certain branches of the lumbar plexus of nerves as they pass with the psoas and iliacus muscles from the abdomen to the thigh. Pain at the outer part of the thigh is not rarely a marked symptom in cases of pelvic abscess. Another symptom frequently noticed under these circumstances is painful contraction of the thigh, with inability to extend the limb.

In the majority of cases, the pains felt in the lower extremities belong to the 'pressure' class. In some cases, however, reflected pains, originating in the manner described by Dr. Beck (see p. 132), are observed.

Lastly, it must be remembered that there are many conditions capable of giving rise to pains in the lower extremities, quite unconnected with diseases or derangements of the generative organs.

PAIN REFERABLE TO THE EXTERNAL GENERATIVE ORGANS.

There are many conditions of the external generative organs capable of giving rise to pain and discomfort of various kinds, the mere enumeration of which in this place would serve no useful purpose: they will be found described in the second section of the present part of this work, under 'Examination of the External Generative Organs.' A few remarks on certain difficulties peculiar to the diagnosis of these cases appear nevertheless to be called for.

In the descriptions given to the medical attendant as to the sensations they experience, women are generally exceedingly vague; very frequently they for a long time disguise the real nature of their sufferings, in the hope of escaping the necessity for an examination. The statements made require consequently to be carefully scrutinised before any decision is based upon them; and of the two evils, to make an examination unnecessarily, and to omit to do so where circumstances really require it, the former is certainly the least.

Thus the symptom described by the patient as 'pain in the lower part of the stomach' may turn out to be due to a bubo in the groin, prolapsus of the uterus, a discharge from the genitals, or an abscess in the labia.

Pain seated in the external genital organs, and of recent date,

is generally connected with presence of abscess or boils of the labia, or with vulvitis. In these cases there is tenderness, difficulty in walking, or some other inconvenience clearly indicative of inflammatory action in the neighbourhood of the vulva. The more chronic cases of disease of the external genital organs offer less difficulty of that kind above alluded to: the patients generally, knowing more of the nature of their disorder, themselves suggest an examination.

MOTIONS, OR PSEUDO-MOTIONS, FELT WITHIN THE ABDOMEN BY THE PATIENT.

It is well known that, at a certain period of pregnancy, the patient usually experiences a peculiar sensation in the abdomen in the region of the uterus, due, as is almost generally admitted, to the actual movements of the fœtus within the uterus, and that the sensation in question usually continues to be felt by the patient until delivery has taken place. Popularly, the time at which the sensation in question is first perceived is termed the period of *quickening*, it being believed, although this belief is of course unfounded, that the fœtus only then begins to have a separate and distinct life of its own. The presence or absence of quickening—that is to say, of the sensations supposed to be due to motions of the child—is considered by women in general as complete proof of the presence or absence of pregnancy; and cases are not at all uncommon in which, in the face of facts demonstrative of the impossibility of pregnancy being present, women continue to imagine that they are with child, led away by their reliance on this supposed infallible sign of pregnancy.

It will be well to consider, in the first place, the nature and character of the sensations conveyed to the mother, and produced by the pregnant condition of the uterus, and, in the next place, other conditions which may give rise to sensations capable of simulating these.

The sensation termed ‘quickening’ is experienced by a pregnant woman usually at the end of four calendar months from the date of conception (Hamilton); or ‘between the end of the twelfth and sixteenth weeks after conception, or, adopting another mode of calculation, between the fourteenth and eighteenth weeks after the last menstruation’ (Montgomery). It is sometimes felt at an earlier period than this, in very rare cases in the tenth week from

conception; and in some cases it is not perceived until a considerably later period. So far respecting the time at which it occurs. The phenomena of quickening are described by Dr. Montgomery as follows:—‘Under ordinary circumstances, when quickening does occur, but especially if it happens in conjunction with the sudden ascent of the uterus out of the pelvis, the woman is apt to feel an unusual degree of nervous agitation, which not unfrequently ends in faintness, or even complete syncope, after which she is sensible of a slight fluttering sensation, which from day to day becomes more distinct, until she fully recognises the motions of the child.’*

There has always been some difference of opinion as to the cause of the sensation termed quickening. Thus it has been considered by some to be due to the ascent of the womb into the abdomen, to the first peristaltic contractions of the newly organised uterine muscular fibres (Dr. Tyler Smith); and the seat of the sensation has even been held to be in the abdominal parietes. The more general idea is that the sensation is due to the actual motions of the child.

This difference of opinion as to the cause and nature of quickening appears to depend on the fact that the phenomena witnessed in different cases, and termed ‘quickening,’ are in reality not always identical; and the term must be considered a composite one, meaning, in one case, the alteration in position of the uterus due to its increasing size, in another the actual sensation of the child’s movements, in a third possible contraction of the uterine muscular fibres alone. This distinction has not been sufficiently insisted upon. It is very certain that by women in general the term quickening is not held to mean exclusively and always the sensation of the motion of the child: they often mean by the expression a particular attack of faintness, which may not be followed by the experiencing of actual sensation of motion of the child for some very considerable time afterwards.

Thus the word ‘quickening,’ taken in its popular sense, is one which serves to characterise phenomena not always identical.

After the period at which quickening is usually observed has passed by, the patient being pregnant, the motions of the child become more and more evident, and the sensations described by the mother are plainly and unmistakably due to the active motions of the fetus in utero. Whatever doubts may exist as to

* *Op. cit.* p. 146.

the actual nature and seat of the first sensations experienced, there can be none as to their cause at a later period. The sensations attributable to the motion of the foetus are now peculiar in regard to their suddenness, abruptness, and distinctness. At first the sensation communicated is that of 'a slight pat or throb, sometimes scarcely more than a flutter,' sometimes a ticking, or resembling the tremulous motion of a little bird when held in the hand (Montgomery); but later the motions give rise to sensations more distinct and intense.

The motions of the foetus are not regular, and are not regularly produced by the operation of the same causes. All women do not experience these sensations equally. In some cases all sensation of the motion of the child has been absent from the beginning to the end of pregnancy, the mother never having perceived the slightest motion on the part of the child. In other cases the motions are violent, to such an extent that patients consult us in order to obtain relief from the annoyance and inconvenience they occasion; they sometimes, towards the end of pregnancy especially, occur so uninterruptedly as to prevent the patient from sleeping; and there is usually some one position in taking which the patient is more particularly liable to be troubled with them.

Regarded as diagnostic of the presence of pregnancy, it cannot be too often repeated that the sensations described, and of the presence of which we are informed by the patient, have very little positive worth. The force of imagination is very great. Hardly a better instance could be afforded of the truth of this saying than is afforded so frequently by women who, imagining themselves to be pregnant, declare that they plainly perceive the motions of a child, and persist in their assertion until the lapse of time convinces them reluctantly of their error. And this mistake is not confined to women who have had but little experience in such matters. The observation of Hamilton's should always be borne in mind, that 'no woman ever yet fancied herself pregnant without also persuading herself that she felt the motions of the child.'

In many cases where women are so deceived and deceive themselves, there is probably no actual mechanical cause for the sensation said to be experienced, but in other cases there are such present. Thus, in women with *abdominal tumours*, sensations of movement are sometimes present; in cases of ovarian tumour, an irregular pulsatile sensation is sometimes perceived, due, probably, to the pulsations of the aorta or of the great vessels lying behind and

pressed upon by the tumours in question; in cases of menstrual retention within the uterus, they have been noticed. The motions felt under these circumstances are doubtless in many instances due to sudden movement of gaseous or other contents in the intestine, which phenomena would be more likely to be observed in cases where the intestines were pressed upon and thrust out of their proper place by tumours. Twitching of the abdominal muscles has also been described as an occasional cause of the peculiar sensations now alluded to. Where the uterus is distended by retention of menstrual fluid, by presence of the ovum in a condition of hydatidiform degeneration, or otherwise, and sensations like those due to motions of a child are present, the cause of the same is probably the contraction of the uterine muscular fibres. Dr. Montgomery relates three cases in which these anomalous sensations of motion were due to presence of 'hydatid pregnancy.' The sensation was different from that experienced in ordinary pregnancy, and was described as a peculiar crawling or sliding sensation.

Between cases in which the sensations experienced have their origin in real motions of a live fœtus and those in which these pseudo-motions or sensations of motion are present, there is usually so wide a difference that but little difficulty is experienced in distinguishing them. Thus, as regards their seat, the spurious motions are often described as present too high up to be due to pregnancy; as regards their character, they are different, as has been already shown. But the most important means of distinguishing between the two things lies in a careful examination of the accompanying symptoms, and their relation one to the other, especially in regard to the time of their appearance. Thus the pseudo-motions may be felt at a time too early for true pregnancy to have occasioned them, or, on the other hand, occurring for the first time late in a supposed pregnancy, the other conditions which should by that time have been noticed are entirely absent.

The diagnosis of the presence or of the absence of pregnancy should never be made to rest on the presence or absence of the sensations now under consideration, or very serious errors may be made. The onus of deciding for or against pregnancy on this ground alone should never be accepted by the attendant: an examination of the abdomen and of the vagina, together with a careful comparison of the results of these examinations

with the results afforded by the rational symptoms, can alone furnish us with the means of solving the problem. It does not follow, because a woman has 'quickened,' that she is with child; nor is it to be inferred, because there have been no quickening and no motion of the foetus, that therefore the woman is certainly not pregnant.

The sensations of motion within the abdomen felt by the observer, and which have a very different diagnostic value from those which have been here alluded to, will be considered under the head 'Examination of the Abdomen.'

CHAPTER IX.

NAUSEA AND VOMITING.

Nausea and Vomiting as Symptoms of Pregnancy—Presence of these Symptoms in Diseases of the Uterus.

ALTHOUGH the presence of nausea and vomiting is by no means necessarily connected with any altered condition of the generative organs, yet it is so frequently observed in connection with such alterations as to render necessary some observations on the diagnostic importance of the symptoms in question. The presence of nausea and vomiting is one of the most commonly observed signs of *pregnancy*; its relation to pregnancy will in the first place be considered.

The nausea and vomiting which occur in pregnant women are usually observed during the early part of the day, while the patient is moving about for the first time, often while she is dressing; hence the term ‘morning sickness.’ But it may be observed at other times of the day, and not at all in the morning. It is often a slight feeling of nausea only; very frequently it happens that the patient retches once or twice, brings up a little mucus, and there is an end of it for that day. In some cases it vexes and harasses the patient during the greater part of one day, leaving her free for the next day or two. It presents, in fact, infinite variety in different persons. It may begin immediately after conception, but more usually is first noticed a week or two later than this. It is more generally, perhaps, than not, limited to the first half of pregnancy. Some patients pass through the whole period of gestation without once experiencing sickness. In a few instances the sickness is so constant, so incessant, that life is actually endangered. Such cases occasion great anxiety to the attendant and her friends, and in some cases it becomes necessary to induce premature labour.

As signs of pregnancy, sickness and nausea are probable ones only, and are generally only of service in directing attention to the possibility of pregnancy. In some cases, however, patients

are able to tell with certainty that they are pregnant, from experiencing these sensations, in association with others which they have felt on former occasions when pregnant.

Sickness and vomiting are not rarely produced by *disorders of the generative system* when there is no pregnancy.*

The facts which have come under my own observation have induced me to conclude that in very many of such cases the sickness is indicative of, or at all events coincident with, contraction of the uterine fibres; which contraction may be produced in consequence of impediment to escape of menstrual fluid, &c. Thus sickness is observed in many cases of dysmenorrhœa where the discharge is in any way impeded (see 'Pain during Menstruation'), and it is observed, in fact, more or less in all cases where the uterine cavity is distended and in process of enlargement. It is interesting, in connection with the question here raised, to learn from Dr. McClintock that he has observed sickness of stomach to be a symptom occasionally attendant on polypus of the uterus.†

Sickness and vomiting are observed also in cases where the uterus itself is engorged, or is affected with chronic inflammation, and in cases where there are no reasons for believing that the cause which has just been alluded to is in operation.

These few remarks will be sufficient to indicate the nature of the connection between nausea and vomiting as symptoms of altered conditions of the female sexual organs. Nausea and vomiting are so very frequently observed irrespective of any disease or altered condition of the generative organs, that it seems almost superfluous to remark that, taken alone, these symptoms are almost valueless as diagnostic of altered conditions of the organs in question.

* See an interesting paper by Dr. Tilt, 'On the Treatment of Sickness in Uterine Inflammation and Diseases of Menstruation.' *Obstet. Trans.* vol. iii,

† *Clinical Memoirs on Diseases of Women*, 1863, p. 162.

SECTION II.

DATA OBTAINABLE BY PHYSICAL EXAMINATION.

IN the former part of this work, the general condition of the patient, the symptoms observed, and the phenomena obviously presenting themselves for notice, were made available for the diagnosis. The data for diagnosis now to be considered are only to be acquired by special methods of examination of the patient. We are enabled, by means of the physical examination in question, to give great precision to our diagnosis, and in certain cases it is quite indispensable to the making a diagnosis at all.

In no system of organs is physical examination capable of being carried to a greater extent than in the case of the female generative organs; by the aid of the speculum, the sound, and the stethoscope, we are enabled to pursue our investigations with an extreme degree of ease, and the variety of information obtainable by all the methods of investigation open to us is thus considerable. It is, however, always to be borne in mind, that physical investigations into the condition of the several portions of the female generative organs are very capable of being carried to excess, and there is a temptation, in the very facility an examination offers for arriving at a diagnosis, to make use too exclusively of this method of obtaining information. And with respect to the methods of examination themselves, it is not unfrequently the case that one especial method of examination is too often used to the exclusion of others. I have known of cases, for instance, in which the examination by means of the speculum had been had recourse to solely, and in which conditions escaped recognition which would at once have been detected by an ordinary digital examination.

The subjects to be now treated of will be discussed in the following order:—

Examination, by inspection and digitally, of the external generative organs, of the urethra, and its orifice; examination of the vagina, digitally and by the aid of the speculum; examination of

the uterus from the vagina, digitally, by the speculum, and by the uterine sound; examination of the abdomen, by inspection, palpation, measurement, auscultation, &c.; and examination of the mammary glands. In reference to each of the parts of the body to which the examination is directed, the various morbid conditions likely to be met with will be described, their differential diagnosis discussed, and their pathological or other significance indicated.

CHAPTER I.

EXTERNAL GENERATIVE ORGANS, INCLUDING THE URETHRA AND ITS ORIFICE: MORBID CONDITIONS DISCOVERABLE BY EXAMINATION.

Congenital Defects—Rupture of Perinæum—Anasarca of Labia—Hernia of Labia—Abscess of Labia, and Boils—Blood-tumours of the Vulva—Fibrous, Fatty, and Encysted Tumours of the Vulva—Elephantiasis of the Vulva—Hypertrophy of Labia—Hypertrophy of the Clitoris—Condylomata, Warts, &c.—Lupus of Vulva—Cancer of the External Generative Organs—Ulcers of the External Generative Organs; Diagnosis of these—Inflammatory Affections of Vulva, Acute and Chronic—Vulvitis, and Discharges from the Generative Organs in Children.

Vascular Tumour of the Meatus Urinarius—Eversion of Mucous Membrane of Urethra—Eversion of the Bladder—Polypus of the Bladder—Thickening and Chronic Inflammation of the Urethra—Stricture of the Urethra.

RESPECTING the diagnosis of the various morbid conditions here discoverable, there is little to be said of a general character. It may be remarked, however, that a physical examination is too frequently omitted; easily removable affections often exist for a long time undetected, owing to the patient's objection to allow the necessary inspection. The only assistance which can be given in the attainment of the diagnosis of these affections of the external generative organs is to present a concise account of them. In the investigation of these morbid conditions, the observer is, or should be, aided by the senses of sight and touch, and hence the diagnosis is not usually a matter of great difficulty.

CONGENITAL DEFECTS.

In some rare instances, certain of the external generative organs are wanting, or exhibit only a rudimentary formation. The whole of the external sexual organs may be found absent, or there may be present what is termed 'cloacal formation,' the rectum, the vaginal canal, and the urethra opening into one common external orifice. And irregularities of other kinds may be observed, giving rise to conditions which have been described as due to hermaphroditism. A full consideration of these various kinds of defective

formation of the external generative organs cannot be entered upon in this work. Particulars concerning these rare cases will be found in several systematic treatises.* The defects which are the most practically interesting are those which relate to the condition of the orifice of the vagina, and the canal of the vagina itself. These will receive due attention in the following chapter.

RUPTURE OF THE PERINÆUM.

A fissure extending backwards from the labial commissure, occasionally even through the sphincter ani, is sometimes produced by the passage of the head or shoulders of the child in a severe or difficult labour. In bad cases—that is to say, where the sphincter ani is seriously compromised—there is involuntary defæcation, and the rent, an irregular fissure in form and shape, is visible to the eye and obvious to the touch. Rupture of the perinæum is frequently associated with descent of the pelvic viscera, of the bladder, of the uterus, &c., lower than usual—in other words, with prolapsus.

ANASARCA OF THE LABIA MAJORA OR NYMPHÆ.

In these cases there is an effusion of fluid into the cellular tissue of the labia majora, or nymphæ, or both, and it usually affects both sides; the distension is uniform, not painful; it is consequent on obstruction to the abdominal circulation, as in the course of pregnancy, general organic disease of the heart, liver, kidneys, &c.

The distinguishing characteristics of the swelling due to this cause are that the swelling is uniform, smooth, pitting on pressure, and painless, at all events at first. Subsequently there may be much pain, due to excoriation of the surface.

OOZING TUMOUR OF THE LABIA.

A solid œdematous condition of the labia, with great secretion from the muciparous follicles, is described as being sometimes met with. It is generally confined to one side; the enlargement is smooth, but firm; the surface is somewhat lobulated; and there is a profuse watery secretion. This condition was first described by Sir C. M. Clarke. It is not a common disease. Dr. Churchill

* A good account of the subject will be found in Kiwisch's *Klinische Vorträge*, Band ii. (Third edition, by Scanzoni. Prague: 1857.) On the subject of Hermaphroditism, the reader is referred to the admirable essay by Dr. Simpson, published in vol. ii. of his *Obstetric Works*.

believes the actual condition present to be one of low chronic inflammation of the labium.

ENLARGEMENT OF THE LABIA DUE TO HERNIA.

An enlargement situated at the upper part of the labia on one side may be due to a hernia in this position. The hernia follows in such case the course of the round ligament. It is characterised by the position, which is in the course of the ligament in question, by its painlessness (unless inflamed), by the impulse communicated on coughing. The diagnosis could scarcely present any great amount of difficulty.

HERNIA OF THE OVARY.

In some very rare cases, a tumour is observed at the upper part of the labium on one side (in the celebrated case related by Mr. Pott, on both sides), and constituted by the ovary, a pouch of the peritoneum in such cases being prolonged into the situation in question. Dr. Meadows lately recorded a very interesting case,* in which there appears to have been primarily an ordinary irreducible inguinal hernia, but secondarily an ovarian hernia. The tumour in this case gave rise to so much inconvenience that it was removed by a surgical operation.

ABSCESS OF THE LABIA ; BOILS.

Abscess of the vulva is characterised by the presence of a rounded circumscribed swelling, of variable size, on one side only, usually on the inner aspect of the labium, which forms in the course of two or three days or sooner, and which is painful and very tender to the touch. It may be produced by blows or injury of any kind, by excess in coitus, by scratching, as in cases of pruritus, by masturbation, &c. The most frequent *seat* of the affection is the gland situated on either side, known as the vulvo-vaginal or Duvernay's gland. This gland becomes inflamed, or the orifice of the duct of the gland becomes obstructed, and the abscess is thus produced. Most cases of circumscribed abscess of the labia originate in the gland in question. Abscess of the vulva of a more diffuse form may be observed as the result of puerperal affections, or it may occur after œdema during pregnancy, or under other circumstances.

* *Obstet. Trans.* vol. iii.

The diagnosis of the presence of abscess in this position could never be very difficult if a careful examination were made, and the history of the case duly enquired into.

Boils are liable to form in the labia as well as other parts of the body. They occasion much irritation, and inconveniences of various kinds. When one boil is in process of healing, another often forms, and the affection may thus last a considerable time.

BLOOD-TUMOUR OF THE VULVA.

This is not by any means a common affection. The tumour, composed of blood effused into the tissue of the part, and doubtless derived from the vessels of the erectile structure described as the bulb of the vestibule by Kobelt,* is generally confined to one side. The tumour may be of considerable size; it is painless, unless when the effusion is considerable and the surface inflamed. Women are most liable to this 'thrombus' of the vulva, as it is termed, during pregnancy, and the swelling has been sometimes so great as to impede delivery. After parturition, also, effusions are frequently found to have taken place into the cellular tissue in this situation. It sometimes happens that the tumour, or the enlarged veins near it, burst externally, and serious hæmorrhage results.

In his recently published work,† Dr. M'Clintock describes the affection under the term 'Pudendal hæmatocele.' This author, who has placed on record some most interesting cases of this affection, believes that a varicose state of the vessels of the vagina or vulva is not, as usually supposed, a precursor of the rupture which permits the effusion of blood; for out of 38 cases, tabulated for him by Dr. Halahan, there were only two in which such varicose condition of the veins was noted as being present. The affection was observed in primiparæ in 13 out of 25 cases where the number of the pregnancy was noted.‡ Dr. M'Clintock has never observed a case of thrombus of the vulva in the non-gravid state, except as a result of direct violence; and even during pregnancy its spontaneous occurrence is very rare, the more usual cause of the affection being a traumatic one. Mauriceau mentions a case

* It is only necessary to examine the drawings illustrative of Kobelt's dissections, to become aware of the importance of the structure in question in relation to the occurrence of effusions of blood in this situation. Copies of these drawings will be found in Dr. Arthur Farre's article 'Uterus,' *Cycl. Anat. and Phys.*

† *Clinical Memoirs on Diseases of Women.* Dublin: 1863.

‡ *Ibid.* p. 273.

in which a blood-tumour in the left labium had existed for twenty-five years, and which, on being opened, gave issue to a matter like the contents of an aneurismal sac.* This was, however, a very exceptional case; ordinarily, the thrombus of the vulva is a recent affection, of rather sudden formation, and in the majority of cases it is an accident attendant on labour.

FIBROUS TUMOURS OF THE VULVA; FATTY AND FIBRO-CELLULAR
GROWTHS; ENCYSTED TUMOURS.

Fibrous growths are not very frequently met with in the external genitals. They are characterised by slow formation, are painless and circumscribed; they may become pendulous, attached by a long pedicle. There is a peculiar form of fibrous tumour—the *recurrent*—of which an interesting instance is recorded by G. Simon.† In this case, after repeated removals, the disease always returned, and finally proved fatal. To the ordinary forms of fibrous tumour there attaches no such tendency to reappear.

Fatty and Fibro-cellular Tumours of the Vulva.—Dr. Churchill‡ relates cases in which tumours answering this description have been present. Mr. Henry Thompson has related an instance in which a firm lobulated tumour, weighing when removed nearly four pounds, grew from the external generative organs, hanging down to within two inches of the knees. Its surface was fissured and nodulated, and it was made up of hypertrophied cellular tissue, with fat in the interstices. It had been growing for nine years. The patient's age was 46. The tumour was chiefly inconvenient from its size.§

Dr. Churchill also describes another form of tumour of the vulva, of which I have seen one instance in a young woman 21 years of age—the *encysted tumour*, containing fluid, and which is only very rarely met with. It grows just within the vulvar aperture.

Capelle records the case of a woman, æt. 30, who had an enormous enlargement, termed by him a *lipomatous tumour*, the size of the head of an adult, originating in the right labium and extending as far as the knee. It was removed by the knife.|| The growth of the tumour dated from ten years previously.

* *Maladies des Femmes*, tom. ii. p. 29.

† Schmidt's *Jahrb.* vol. cv. p. 53.

‡ *On the Diseases of Women*, 4th edit.

§ *Trans. of the Patholog. Soc.* vol. vi. p. 269.

|| *Journ. de Méd. de Bruxelles*, Jan. 1860, p. 41.

ELEPHANTIASIS OF THE VULVA

is a peculiar hypertrophy of the skin of the part. The disease is very rare; the size of the tumour thus formed may be very considerable, as in the case depicted in the French edition of Scanzoni's work on 'Diseases of Women,'* where the labia, enormously increased in size, extended down as far as the knees. The disease is said to be epidemic in Barbadoes. It is not often witnessed in temperate zones. (Scanzoni.)

HYPERTROPHY OF THE LABIA

is not so rarely witnessed. The increase in size is generally due, when the labia majora are affected, to the presence of large quantities of fat. Whether due to fat or to fibro-cellular tissue, the enlargement is smooth and uniform, thus differing from elephantiasis and from other forms of enlargement of the labia. The hypertrophy may affect the labia majora or the labia minora exclusively. A remarkable case of hypertrophy of the nymphæ has been described by Breslau, in which the presence of the tumour and the dragging of the enlarged organs on the lips of the urethral orifice produced incontinence of urine. This case has been already alluded to (see p. 105).

HYPERTROPHY OF THE CLITORIS

is now and then met with as a consequence of eczema of the skin in the neighbourhood, or of a chronic inflammatory condition of the surrounding parts, or of syphilis, or without evident cause. It is occasionally congenital. The clitoris is also liable to become the seat of cancerous growth.

Cases are on record in which the clitoris has attained an enormous size, so much so as to render walking and moving about inconvenient. The identity of the tumour with the clitoris could of course be ascertained only by carefully examining its attachment superiorly.†

In cases of self-abuse, the clitoris may become, but not necessarily so, hardened and hypertrophied.

* Paris, 1858.

† Several cases of enlargement of the clitoris will be found described in Dr. Churchill's *Diseases of Women*.

CONDYLOMATA, WARTY EXCRESCENCES, ETC.

Various forms of excrescences of the external generative organs are noticed. *Condyломата* are warty growths, often of considerable size—flat, smooth elevations, growing irregularly round the orifice of the vulva, and occasionally in such profusion as to almost block up the entrance. They are observed in cases of syphilis of the female generative organs. There is generally in such cases a profuse offensive discharge; and, on enquiry, the syphilitic source of the growths in question is made evident. Warts of non-syphilitic character, and resembling those seen in other parts of the body, may be found growing on some part of the vulvar surface. The diagnosis of the syphilitic from the non-syphilitic cases is not usually a matter of any difficulty. The further consideration of this subject falls scarcely within the province of this work.

LUPUS OF THE VULVA.

The chief characteristics of this disease—not a very common one—are, thinning of the skin, hypertrophy and knotty condition of the cellular tissue beneath, formation of indurations and enlargements, ulcerations and contractions. The disease is chronic, and is not usually painful. The ulcers form slowly, and the surface heals in one place while it is ulcerating in another. The contractions left on healing of the ulcers are very considerable. The disease differs from cancer, but exhibits a very close resemblance to lupus of the face. It may prove fatal by exhaustion, or by peritonitis consequent on formation of fistulæ. The disease was first accurately described by Huguier, who divides the cases of this disease into three categories—the superficial, the perforating, and the hypertrophic forms.* Dr. West, whose description of lupus is most complete, has himself observed five cases.†

The disease was observed in only one of these cases before the age of twenty; it was observed most frequently between the ages of twenty and thirty-five. Its duration may be gathered from Dr. West's statement, that in the fourteen cases observed by Huguier and himself some cases admitted of a cure after more than three years, and of great relief even after eight years. One case had lasted

* Huguier's important memoir will be found in the *Mémoires de l'Acad. de Méd.* for 1849.

† *Opus cit.* p. 653.

between ten and eleven years. The disease kills, when fatal, by producing peritonitis, fistulæ, contraction of the bowel, and not, as cancer does, by attacking some distant organ, or by involving all the tissues in one common morbid change (West). Two cases of this rare affection are recorded and delineated in Dr. M'Clintock's recent work.

CANCER OF THE EXTERNAL GENERATIVE ORGANS

usually occurs in the form of epithelial cancer, scirrhus and the medullary form of the disease being much more rare. Any part of the external generative organs may be the starting-point of the affection—the clitoris, the labia, are more commonly first affected. In its first stage, epithelial cancer exhibits itself as a 'little hard tubercle on the outer surface, but near the edge, of the labium' (West). The tubercle in question is not usually painful, but gives rise to itching and smarting. The diagnosis of the indurations due to commencing cancer of the labia is often a little obscure at first. In a case which fell under my notice, the occasional presence of a peculiar sharp pain darting across the groin led me to suspect cancer; the result proved this suspicion to be well founded. After some months' duration the surface becomes ulcerated, and the ulceration then spreads. The edges of cancerous ulcers are indurated, and this induration is perhaps the most distinctive feature of the ulcer; there is occasionally a bloody discharge; subsequently the inguinal glands swell, and the patient's constitution becomes affected in the characteristic manner. The disease may begin in the groin, as in a case of Dr. M'Clintock's, and travel to the generative organs.

Mr. Jonathan Hutchinson has collected the particulars of fourteen cases of epithelial cancer of the female genitals.* The labium was the part affected, the disease affecting the clitoris and nymphæ also in one or two of the cases. The longest time the disease had existed was five years. The disease is stated to have returned after operation in three of the cases. Operation is said to have been finally followed by recovery in the other cases, save one, where the result is not given.

ULCERATIONS OF THE EXTERNAL GENITALS; THEIR DIAGNOSIS.

In reference to the diagnosis between ulcerations of syphilitic, cancerous, lupoid, or other nature, it may be remarked, *in limine*, that

* *Med. Times and Gazette*, Oct. 1860, p. 379.

it is safer in doubtful cases to depend on the deductions to be drawn from attentive consideration of the history and general symptoms of the patient, rather than from the appearances presented by the ulcerated surface itself, these appearances, *per se*, being likely to lead to the formation of erroneous conclusions.

Ulcerations due to *syphilis* are distinguished from those due to *lupus* by the following characters. In the case of syphilis, although the ulcers may be like those of lupus superficially, there is an absence of induration of the cellular tissue beneath. The coppery hue of syphilis is wanting in lupus. The history and course of the two affections, the absence of syphilitic affections in other parts of the body, in cases where the disease of the vulva has lasted for some time at least, would be against syphilis. Syphilitic ulcers have a predilection for the internal or mucous surface of the vulva, and especially the labia minora. In the case of lupus of more severe form, where there is considerable destruction of the tissues of the part, there might be a possibility of confounding it with the phagedænic form of syphilis. Here the distinction would rest on the rapid course of the syphilitic, the chronic course of the lupoid, disease; added to which the previous history of the case would throw much light on the subject.

Ulcerations due to *cancerous* disease of the vulva have the characters ordinarily possessed by cancerous ulcers elsewhere. The hard, jagged, everted borders, the considerable hardening of the tissue beneath, greater than in the case of lupus, the occasional bleeding, lancinating pain, and progressive character of the disease—these are the chief distinctive features. There is less disturbance constitutionally in the case of cancer of the vulva than in cancer of other parts, inasmuch as cancer of the vulva is usually of the epithelial variety. Syphilitic ulceration, as a rule, could hardly be confounded with cancerous; the course of the affections is essentially different; the cancerous disease is limited to one spot, and there is, as in the case of lupus, absence of syphilitic disease in other parts of the body. The diagnosis of syphilitic ulcer is not always so easy. Dr. West has observed some cases of chronic ulceration of the mucous surface of the vulva, which he believes to have been forms of tertiary syphilis, but which proved so difficult to cure as to raise the question as to their malignant nature.* The ulcers in question were on the mucous surface of the vulva, for which they exhibited a preference. From epithelial

* *On Diseases of Women*, p. 651.

cancer, and from rodent ulcer or lupus, these ulcers require to be distinguished. In lupus, there is more induration around and in the base of the ulcer, and the orifice is often contracted; whereas, in Dr. West's cases of supposed syphilitic origin, these characters were wanting.

Simple ulcerations are usually distinguished from syphilitic ones by the absence of inflammation around the ulcers in the syphilitic cases.

Twice I have observed a patch of ulceration, the size of a shilling, on the surface of the labia, in a young woman the subject of scrofula. This form of ulceration might be termed *scrofulous ulcer of the labium*. The edges were pretty well defined, there was little inflammation around, and not much pain. On both occasions the ulcer appeared simultaneously with great constitutional disturbance, and disappeared when, after removal to the country, the patient had become in other respects better.

VARIOUS FORMS OF INFLAMMATION OF THE VULVA.

The cases coming under this head constitute a very interesting and important class; the diagnosis of the different causes of inflammation of the vulva being a subject of great practical interest.

Vulvitis.—Acute inflammation of the vulva may be produced by blows, by undue exertion in walking, by intemperate sexual intercourse, by menstruation, by gonorrhœal infection, by syphilis; and it may occur in conjunction with affections of the vulva or vagina of a chronic character, such as lupus, follicular inflammation, cancer, &c. Erysipelatous inflammation is found to occur here, as on other parts of the surface. Abscess of the vulva, in which a circumscribed enlargement of one part of the vulva only is present, is not included in the present series of cases, though vulvitis may lead to abscess.

The inflammation of the vulva produced by any of the foregoing causes may be more or less intense in degree, and the appearances observed will vary according to the time at which the observation is made. Swelling of the labia, pain on movement of any kind, tenderness, pain in micturition, redness of the mucous membrane, with more or less irritative fever—these are usually present at the commencement of the disease. A discharge more or less copious, and generally of a purulent or muco-purulent character, is found issuing from between the labia; the skin at the upper and inner part of the thighs is excoriated. The swelling may be very considerable. If the case be not seen until a later period, the swelling may

have subsided; but the tenderness, together with a constant discharge, and a troublesome irritation and excoriation of all the mucous surface, are usually still found to be present.

In some cases we find the mucous surface of the vulva covered by diphtheritic patches of exudation, there being at the same time a subacute inflammatory condition of the vulva generally. The patient is, under such circumstances, weak and prostrated, and these cases may occur epidemically.

An aphthous form of inflammation may attack the vulva—an affection more especially observed, however, in children.

In order to arrive at a diagnosis of the nature of the case, a careful consideration of the history of the patient is necessary. If care be taken to elicit all the facts, a tolerably correct conclusion may generally be drawn as to the cause of the inflammation. (For the diagnosis of gonorrhœa, &c., see pp. 93, 94.)

With vulvitis may be conjoined inflammation of, or discharge from, the vaginal canal higher up; and, in fact, chronic vulvitis is usually associated with vaginitis. But the inflammation is, very frequently, almost entirely limited to the surfaces of the vulva; and hence the necessity for considering such cases apart.

Chronic inflammatory Affections of the Vulva.—In *eczema* of the vulva, we find redness of the skin of the folds between the labia and the thighs and their neighbourhood, producing very constant and troublesome itching. Undue walking exercise is sometimes sufficient to produce this affection in a mild form. There is, however, a more chronic and obstinate form of the affection not uncommon. When the disease has become thus chronic, the skin is often found thickened, hypertrophied, and the hairs in great part disappeared. *Prurigo* of the external genitals is not often present, according to Dr. West; pruritus, where noticed, being due to other conditions of the parts.

Vulvar folliculitis, a condition for our knowledge of which we are indebted to Dr. Oldham, and Huguier of Paris, is constituted by the presence of little rounded prominences irregularly scattered over the surface of the vulva. These prominences are painful and irritable, and after a time break and discharge a little puriform fluid; and the surface of the vulva generally becomes inflamed and red, and in places ulcerated. The inflammation is seated in the mucous follicles of the surface. This condition is met with more especially in pregnant women and during the heat of summer, and appears to be caused by want of cleanliness, by excessive indulgence in sexual intercourse, &c. The sphincter of the vagina is frequently,

according to Dr. Oldham, contracted; and a painful hyperæsthetic condition of the vulvar orifice is sometimes associated with this follicular inflammation. The little ulcerated surfaces left after the escape of the pus are distinguished from ulcers due to syphilis by the fact that in syphilis the ulceration is more generally on the inner surface of the labia minora, by the larger surface of the ulcer, and by the peculiar history of its appearance; whereas, in vulvar folliculitis, the whole vulva is more or less affected, the surface ulcerated is very small, and not inclined to spread.

The affection is a very painful one; the patient finds a difficulty in sitting comfortably; pain on intercourse, troublesome pruritus, occasional bleeding from the surface, slight discharge—these symptoms are, one or more of them, generally observed.

VULVITIS, AND DISCHARGES FROM THE GENITALS, IN CHILDREN.

These cases require to be considered apart. A good deal of misconception, and consequent injustice to individuals, have arisen in connection with this subject, and it is only now beginning to be extensively recognised as a fact that vaginal discharges from the generative passages in young children may occur quite independently of contagion.

The discharges from the genitals observed in children have, for the most part, their origin in the glands just within the vulva, the vaginal canal within the hymen being generally unaffected.

The following are the chief causes of vulvitis in children:—

1. These discharges are often witnessed in children of scrofulous or debilitated constitutions.
2. They may frequently be traced to the presence of ascarides in the rectum, directly or indirectly producing such an amount of irritation as to cause leucorrhœa.
3. Simple want of attention to cleanliness may be the only assignable cause.
4. A form of leucorrhœa is sometimes prevalent in children simultaneously with diphtheritic affections of other mucous passages.
5. Gonorrhœa communicated by the male.
6. The irritation of dentition.

The fact that the child is weakly, or showing other signs of a constitutional tendency to scrofula, would lead us to connect the presence of a vaginal discharge therewith. If the leucorrhœa proceed from vermicular irritation, there is generally extreme irritability and itching in the neighbourhood of the rectal orifice, and other well-known signs of the presence of these parasites are observed. A circumstance which I have noticed more than once in connection with the presence of ascarides

in the rectum, is the objection children affected with them have to sitting on soft cushions: anything hard or angular is preferred.

Cases of rape on children sometimes result in the production of discharge of a gonorrhœal nature. The moral evidence is, in the case of very young children, often open to great suspicion: the medical evidence must be given with great circumspection, for it is in the case of very young children that discharges from other causes are, as has just been pointed out, by no means unfrequently observed.

In cases where 'violation' is suspected, the condition of the vaginal outlet is an important subject for consideration. A complete discussion of this interesting subject cannot be entered into here. The chief points to which attention should be directed, however, are the following:—In *children* examined soon after violation has been effected, there are marks of violence on the external genitals, which may be bruised and lacerated, the laceration generally affecting the perinæum, and together with this the hymen is found torn. These are the more usual results observed. The presence of a *discharge* from the genitals of a child, which the friends of children among the lower classes are often disposed to attribute to the effects of intercourse, is a circumstance which by itself is worth nothing as a sign of violation. The evidence of injury to the perinæum, and of laceration of the perinæum, is much more to be relied on than the mere presence of a discharge. For further information, the reader is referred to the standard works on 'Medical Jurisprudence.' In children the signs of violation persist for a much longer period than in adults, and, in the case of the former, signs may still be present from eight to fourteen days after the occurrence. In adults the marks of violence observable are often very trifling, especially in the case of married women, and, unless extreme in degree, these evidences disappear very rapidly. In cases of suspected violation, both in adults and children, the microscope might be very usefully employed in rendering the diagnosis more certain. The spermatozoa are capable of being recognised for a very considerable time after being deposited in the vagina, and there is reason for believing that, under favourable circumstances, they might be found in the mucus of the upper part of the vagina even as late as twenty-four or thirty-six hours after intercourse had been effected.

URETHRA AND ITS ORIFICE.

VASCULAR TUMOUR OF THE URETHRA.

This is an exceedingly important affection. The tumour is an excrescence, bright red in colour, which grows just within the external orifice of the urethra, varying in size from a pin's head to a hazel nut. The tumour is usually more or less pediculated, and the pedicle may have a length, as I have myself seen, of a quarter of an inch. It consists of an hypertrophy of the mucous papillæ of the part, and the shape and appearance give one the idea of vegetation growing on the mucous membrane. Scanzoni gives a wider limit than this as regards size. The tumour may be single or partially divided. The best account of the intimate structure of the tumour has been given by Mr. Burford Norman in the *London Journal of Medicine*, Feb. 1852. The growth is usually possessed of an extreme degree of sensitiveness. The symptoms produced are occasionally very severe; their intensity is out of all proportion to the size of the tumour. The chief symptoms are, difficulty, pain, and frequency of micturition, pain in intercourse, pain on walking, &c. The most constant sign is pain immediately after passing water, whilst the last few drops are escaping from the bladder. These tumours may give rise secondarily to several other symptoms, and in some cases the symptoms are so indefinite that the diagnosis remains for a long time obscure, more especially in cases where modesty induces the patient to refrain from giving such an explicit account of her symptoms to the medical attendant as to lead him to make an examination.

EVERSION OF THE MUCOUS MEMBRANE OF THE URETHRA

has been noticed by Lisfranc, M'Clintock,* and others. In such cases, a tumour of variable size, of a reddish, a dark red, or pale red colour, may occupy the position of the urethral aperture. It would easily be distinguished from vascular tumour on attentive examination of the relations of the growth, and by the use of the catheter; and unless inflamed and very painful, it would be capable of being pushed back and reduced.

* *Loc. cit.* p. 236.

EVERSION OF THE BLADDER

is sometimes observed in very young children. It occurs in infants, probably in the same class of cases as those in which eversion of the rectum is noticed, and from a like cause—viz. violent straining during coughing, or possibly in the dysuria due to presence of ascarides. Dr. M'Clintock refers to a case observed by Dr. Beatty, of Dublin, in a child nearly two years old. The tumour was scarlet, the size of a chestnut, very painful. It was replaced by pressure, and the urethra found to be very large. Mr. Crosse, of Norwich, has related a precisely similar case in a child about the same age, and which was at first considered to be a vascular tumour of the meatus. An operation was about to be undertaken for its removal, when Mr. Crosse discovered the true nature of the tumour. In adults, eversion of the bladder only occurs where fistulous openings are present.

POLYPUS OF THE BLADDER.

Lastly must be mentioned the very rare event of which an instance, recorded by Mr. Birkett, is alluded to by Dr. M'Clintock,* of *polypus* arising from the interior of the *bladder* and projecting through the urethra. The case occurred in a child five years old: the polypus grew from the upper boundary of the neck of the bladder, and formed a red mass projecting through the meatus and between the labia. Dr. M'Clintock states that only eleven instances of this disease have been placed on record.

THICKENING AND CHRONIC INFLAMMATION OF THE URETHRA.

In cases where unusual conditions as regards the performance of micturition are present, the state of the urethra itself is frequently a matter of importance. We may find the orifice free from vegetations such as those just described, but the canal itself is in an abnormal condition. It presents to the finger a hard thickened cord, which may or may not be tender to the touch; the introduction of the catheter may be attended with much pain. In many cases we have urethritis as a consequence of *gonorrhæal* infection; there is in such cases redness and tenderness, and there is a puriform discharge from the urethra, scalding pain during micturition, &c. The gonorrhæal inflammation of the urethra continuing

* *Loc. cit.* p. 238.

a long time, we find occasionally further effects—viz. production of a hard thickened condition of the urethra, such as that above described; and apart from a careful scrutiny of the history of the case, there may be nothing to indicate whether the chronic urethritis present be of gonorrhœal origin or not. Frequency and pain in micturition, slight discharge, pain during sexual intercourse—these are the symptoms usually present in these cases.

STRICTURE OF THE URETHRA.

This is a condition which, as already remarked (see p. 98), is very rarely met with in women. It necessarily occasions difficulty in micturition. By introducing a probe into the canal, the presence of an obstruction would be readily recognised. The obstruction—mostly resulting from inflammation the effect of injuries during parturition, wounds, or syphilitic ulceration—is usually met with close to the external orifice. Mr. Henry Thompson's valuable work on 'Stricture' contains an account of some cases observed by himself and others.*

* *Opus jam cit.* pp. 379 et sequent.

CHAPTER II.

THE ORIFICE AND CANAL OF THE VAGINA: ABNORMAL CONDITIONS RECOGNISED BY EXAMINATION.

Methods of Examination; Digital and Ocular Examination—Normal Condition of the Vaginal Canal.

OBSTRUCTIONS OF THE VAGINAL ORIFICE AND VAGINA.—Adhesion of Labia—Absence of the Vagina—Imperfect Formation of Vagina—The Hymen: various Morbid or Unusual Conditions—Relation of the Latter to Menstrual Retention—Stricture of Vagina, Congenital and Acquired—Extreme Narrowness of Vagina—Diagnosis of suspected defective Development, or of entire Absence of the Uterus, Vagina, &c.

Double Vagina—Alterations in the Direction of the Canal—Alterations of Sensibility of Ostium Vaginae or Vagina—Hardness or Resistance of the Vaginal Wall—Vaginal Fistula—Alteration in the Colour of Vagina due to Pregnancy.

TUMOURS PROJECTING AT OR BEYOND THE OSTIUM VAGINAE.—Cystocoele; Ascites with Prolapse of Vaginal Wall; Vaginal Cyst; Menstrual Retention—Vaginal Rectocoele; Entero-vaginal Hernia—Tumours connected with the Uterus—Polypus of the Vagina.

TUMOURS PROJECTING INTO THE VAGINAL CANAL.—Polypus of Vagina; Cysts of Vagina; Fibrous Tumours of Vagina; Cancerous Growths—Vaginal Enterocoele.

Methods of Examination.—The ordinary method of obtaining information as to the condition of the vagina is by the introduction of one or more fingers into the canal—*digital* examination. It is sometimes necessary to add to this an ocular examination of the canal, either with or without the aid of the speculum. Information as to the condition of the uterus is obtained also by the methods of examination just noticed. The consideration of the latter subject—viz. examination of the uterus from the vagina—must be taken separately, and is therefore for the present postponed.

Digital examination of the vagina is effected in the following manner. The patient lying on the left side, the forefinger of the right hand, previously well oiled, is introduced between the labia and into the vagina. For the purpose of ascertaining the condition of the parts near the lower extremity of the canal, the introduction of one finger is sufficient; but it is generally necessary to introduce the second finger also, to examine the condition of

the vagina higher up : in a few cases, the introduction of all the fingers is found necessary. In effecting this operation, the left hand should be placed on the right hip of the patient. This assists in giving the operator a correct idea as to the position of the entrance of the vagina. The finger or fingers must be introduced slowly and with care.

The examination of the *canal of the vagina* is accomplished by the finger or fingers introduced as before described. Information is thus obtained as to the size, shape, and direction of the canal, as to the state of the lining membrane, its sensibility, smoothness or roughness, and its temperature. In certain cases, the eye may be also used, in order to ascertain the presence of undue redness or other changed conditions of the mucous membrane, and a more minute examination of the canal by means of the speculum is necessary where the presence of unnatural communications between the vagina and the bladder or rectum is suspected; also in some other cases.

Normal Condition of the Vaginal Canal.— It is hardly necessary to remark that we must be acquainted with the normal course, direction, and length of the vagina, in order to institute an examination with any advantage. With the patient lying on the left side, the distance from the upper extremity of the vagina to the situation of the hymen is, in round numbers, three inches, as a rule rather less. This distance, measured off on the forefinger, extends from the point of the finger to the centre of the proximal phalanx; but the measurement from the upper part of the vagina to the lowest part of the commissure of the vulva is four inches. Practically, it is necessary to bear in mind that the distance from the external surface of the body to the extremity of the vagina is one inch greater than that of the vagina itself. Normally, when the tip of the forefinger touches the highest point of the vagina, the metacarpo-phalangeal joint corresponds exactly with the entrance of the vulva.

In effecting an *ocular* examination of the vagina, the patient is placed in the position above described, or, as is more convenient under some circumstances, lying on her back and the knees separated. The examination by means of the speculum is also effected in either of the two positions indicated, but most easily in the latter. In searching for fistulæ in the vesico-vaginal septum, the patient is sometimes placed on the hands and knees.

OBSTRUCTIONS OF THE VAGINAL ORIFICE AND VAGINA.

First of the abnormal conditions discoverable by examination, may be considered the various forms of obstruction met with at the orifice or entrance of the vagina. Obstructions situated higher up, and in the canal itself, will be next treated of.

On attempting to introduce the finger at the vaginal orifice, an obstruction may be encountered. This obstruction may be due to any one of the following conditions:—

Adhesion of the labia majora;

Absence of the vagina (congenital);

Imperfect formation of vagina;

Presence of the unruptured hymen; or,

Stricture of the lower part of the vagina (acquired).

Each of these conditions must be separately considered.

ADHESION OF THE LABIA MAJORA.

The labia majora may be adherent in the middle line, there being only a small opening above—the urethral orifice. Cases of this kind are chiefly met with in infants or young children.

Such adhesion is sometimes met with, but in a partial degree only, after adult age has been reached. The closure here alluded to is very different from that situated higher up within the vagina, where the hymen is in question. In the latter case, the obstructive membrane is not visible until the labia have been separated; the labial obstruction is quite on the surface, the perinæal raphé extending forwards much further than usual, and all that is seen of the vagina is a little recess just beneath the urethral aperture.

ABSENCE OF THE VAGINA.

The vagina may be altogether absent. This is a condition not frequently met with. There may be in such cases, but by no means constantly, as will be presently more fully explained, an imperfectly developed condition of the labia, and other external generative organs; the patient, if arrived at the usual age of puberty, has never menstruated, although there may be the usual amount of mammary development and of sexual instinct. It is found, on inspecting the parts, that beneath the clitoris is situated the urethral orifice, but below this there is no vaginal canal.

VAGINA IMPERFECT.

It is not so rare, however, to find that the vagina is imperfect, consisting of a small sac or recess only, and in such a case the finger only passes inwards for a short distance and with difficulty. Here, as in the case of complete absence of the vagina, the catamenia are usually absent. The further diagnosis of such cases, of those also in which defect of the internal generative organs is suspected, will be considered presently.

PRESENCE OF THE HYMEN :

VARIOUS MORBID OR UNUSUAL CONDITIONS OF THE HYMEN.

The hymen is a membrane varying exceedingly in its form, structure, and dimensions. On making a digital examination, the point of the finger, in passing backwards, downwards, and inwards from the point where the urethral orifice is situated, encounters the hymen, if this membrane be present; the membrane itself being situated within a short distance of the posterior labial commissure. The finger passes into a recess for a short distance before it comes in contact with the obstructing body. This it is important to bear in mind in distinguishing these cases from cases of absence of the vagina: in cases of the latter kind, the obstruction is on the surface. The most usual form of the hymen, where still intact, is crescentic, the concavity being directed forwards and upwards: the canal of the vagina is thus closed posteriorly, but not anteriorly. This is the most common form, but occasionally the hymen is circular, and the opening into the vagina is in its centre. In the first case the tip of the finger would meet with the opening a little nearer to the urethral orifice than in the second. The presence of the hymen was at one time considered evidence of virginity, and its absence proof to the contrary; but neither of these positions is sustained by known facts. Instances are recorded of the presence of the hymen in prostitutes who were at the same time the subjects of syphilis; on the other hand, in women of known virtue and propriety of conduct, the hymen is often indistinct or wanting. If we are called upon to make a digital examination of a reputed virgin, we should expect to find a difficulty in introducing the finger into the vagina, owing to the presence of the hymen; but we should not be justified in forming a conclusion unfavourable to the character of the individual from the fact, alone, that no such impediment to the passage

of the finger was experienced. And with reference to the *degree* of resistance, we should expect to find, in cases where the hymen is tolerably perfect, considerable differences in different cases. Thus, the membrane may be, and indeed it usually is, thin, and non-resistant enough to allow of the ready distension and stretching of the orifice in its centre or at its side by the pressure of the finger; it may be so dense and tough as to resist this distension altogether, or the membrane may be so loose and lax that the pressure of the finger, instead of opening it, carries the membrane before it, as in the case of the finger of a glove pushed within itself. Lastly, there may be only such slight perforation in the membrane as to be hardly recognisable, and not at all by the point of the finger alone: the obstruction is apparently complete. These variations in the physical condition of the hymen are of importance in reference to the diagnosis of the cause of sterility.

When we are called upon to investigate a case of obstruction of the vaginal entrance, and in which the hymen is the part involved, we generally find that there is difficulty in sexual intercourse, or, that there is sterility, without any allusion being made by the patient to difficulty in intercourse, or that menstruation has never occurred. In the latter case, there is possibly menstrual retention due to imperforate hymen. And the case has to be considered from these different points of view.

Menstrual Retention due to Imperforate Hymen.—The relation of abnormal conditions of the hymen to possible menstrual retention, as being a very important subject, demands special mention.

The form of menstrual retention associated with imperforate hymen is observed in young women who have never menstruated, who have arrived at puberty, and who have at that time experienced, monthly, and month after month, severe pain in the hypogastric region without any fluid escaping from the vagina, and who present all the symptoms before described (see pp. 32, 137) as indicative of distension of the uterus with fluid for which there is no natural outlet. In most of such cases, the hymen is found to be imperforate, and the finger, when introduced into the vulva, comes upon a very tense elastic swelling, constituted by the thickened hymen pressed downwards and put on the utmost stretch by the fluid incarcerated above it. The menstrual blood distends the vagina and the uterus under such circumstances, and we should expect to find evidence of such distension of the uterus in the presence of a round firm tumour above the pubes (see 'Examination of Abdomen'), or on examination from the rectum. But

in some cases, although the patient has never menstruated, and although there are all the signs of menstrual retention present to an extreme degree, we do not find, on examination, any tense elastic swelling at the situation of the hymen; nevertheless, there may still be menstrual retention. The point to which attention is now directed is in fact this—that there may be menstrual retention in the production of which the hymen has no concern. The hymen may be normal, the menstrual retention being then due to congenital closure of the os uteri, or to an obstruction of the vagina higher up than the situation of the hymen. The latter description of cases will be presently considered.

The diagnosis of the various kinds of obstruction liable to be met with at the position of the hymen, is determined by the following considerations. In cases of absence of the vagina, or where the vagina is very short, ending at or near the position of the hymen, the physical examination may reveal conditions pretty nearly resembling those present where the hymen is the obstructing agent; the finger can only be made to pass a short distance. The distinction then rests on the presence of the catamenial discharge in the latter, its absence in the former class of cases. Where there is obstruction to intercourse, but menstruation is present, it is clear that the vagina cannot be, altogether at least, absent. But there may be obstruction to intercourse from presence of a thickened, but still perforated, hymen. If the hymen were absolutely imperforate, there would be menstrual retention with its peculiar signs, in addition to other signs of obstruction. Congenital stricture of the vagina is usually situated higher up than the seat of the hymen. Congenital narrowness of the vagina would be easily and obviously distinguished from obstruction due to thickened hymen. Spasmodic action of the sphincter vaginæ may produce obstruction to the entrance of the finger, or to sexual intercourse, but this is a form of obstruction which could hardly be confounded with that due to thickened or imperforate hymen.

STRICTURE OF THE VAGINA.

There are two classes of cases coming under this denomination. First we have those *congenital* instances in which the vagina is normal below, the hymen in its usual position, but a short distance above the hymen the finger meets with an obstruction—the canal of the vagina, in fact, appears far too short. Here the apparent shortness may prove to be due to presence of a fibrous or membranous septum dividing the vagina above the hymen into two parts.

The usual seat of this septum is the junction of the upper with the middle third of the vagina. In the second place we have cases of real stricture of the vagina, due to adhesions of the opposite walls, following after lacerations or wounds of the vagina, the primary cause of such lacerations being accidents connected with the process of parturition, lacerations of the vaginal walls with subsequent cicatrisation and contraction.

Regarding the congenital class of cases, we may have complete absence of an opening in the septum, there being then usually found to be present an accumulation of menstrual blood above the obstructing membrane or partition; or, on the other hand, there may be an opening sufficient to allow of the escape of menstrual blood. It is obvious that in the former case there is no possibility of menstruation occurring, and impregnation is equally impossible. Such instances are not common. Complete congenital closure of the vagina might be confounded with imperfect hymen, or with imperforate condition of the os uteri. Incomplete (i. e. permeable) congenital stricture of the vagina might be confounded with obstruction from resistant hymen. The diagnosis in these several instances would be made out by careful combined examination by the vagina and rectum. The finger being introduced into the rectum, the observer is enabled to determine whether the obstruction felt be really the extremity of the vagina or not; the position of the uterus would indicate this clearly enough.

The cases of acquired complete stricture of the vagina are very easily distinguished from those of the congenital variety, by the circumstance, that in the latter cases the patient has never menstruated. In acquired stricture of the vagina the canal at the seat of the stricture is generally irregular in form and shape, contorted, or knotty, and firm fibrous bands are to be felt under the finger. The seat of the stricture may be high up in the vagina, or low down; any part of the canal may be affected. Menstruation more often still persists, but the stricture, if complete, causes complete suppression; and, moreover, the patient in the latter case remains afterwards sterile. The history very generally points conclusively to the diagnosis in these instances of acquired stricture of the vagina.

EXTREME NARROWNESS OF THE VAGINA,

hardly amounting to stricture, may be met with, the canal being quite patent, although exceedingly small; the condition simply interfering with due performance of sexual intercourse, though

not necessarily with impregnation. It has importance, for this reason in the first place, and in the second from the circumstance that when the vagina is very narrow it is often also short, and the uterus is found imperfectly developed. All degrees of this narrowness may be met with in different cases.

It may be worth while in this place to mention the fact that in cases of vaginal stricture or narrowness, sexual intercourse has been known to have been effected by the urethra, the latter canal has in such cases been found to have undergone great dilatation.

In connection with this question we have to consider a very important subject, viz., the

Diagnosis of Cases of suspected defective development or of entire absence of the Uterus, of the Vagina, &c.

The distinction between cases of simple adhesion of the labia, presence of the hymen, and stricture of the vagina, have been alluded to. We have now to consider the further diagnosis of cases where the vaginal orifice is absent, or the canal small, short, and imperfectly formed. It is occasionally necessary to determine what is the state of the internal generative organs in such cases, in reference to the advisability of recommending marriage, &c.

In the first place, it appears from a careful consideration of recorded facts, that the conditions presented by the *external* generative organs give but little clue to the condition of the internal generative organs; that is to say, that there is no constant and invariable relation between the degree of the development of the generative organs, external and internal. Thus we meet with cases recorded in which the vulva being pretty well developed, the pubes well covered with hair, the breasts not imperfectly formed, the uterus is entirely absent. And the opposite condition has been met with, viz. absence of developed external generative organs with presence of a uterus sufficiently well formed to exercise its functions. Between the two extreme cases all sorts of gradations are witnessed and have been recorded. In cases where the internal generative organs are imperfectly formed, the variations from the normal standard are numerous in kind and degree; the uterus may be double, one cornu being well developed, the other imperfectly so, or both equally well developed. In extreme but very rare cases, the uterus is entirely wanting. Kussmaul,* whose elaborate work embraces all at present known on the subject, states that in many of the older recorded cases of absence of uterus,

* *Op. cit.*

the nature of the condition which was actually present is not clear, as the diagnosis rested on the absence or defective condition of the vagina; and he believes that in the more modern instances, even where the more careful and extended examination to be presently described was performed, one cornu of the uterus may still have been present, escaping recognition.

The variations in the development of the vaginal canal itself, standing as it does midway between the external and internal generative organs, are very important and interesting. It is more usually the case, that where the uterus is defectively formed, the vaginal canal is also defective in some way; but cases are on record in which the vaginal canal has been altogether absent, while the uterus has been well developed enough to fulfil its functions. It is obvious that cases of the latter description have a great practical interest, for in those instances most may be done in the way of relief to the patient, as will be presently shown.

1. The indications offered by the state of the *breasts*. These offer little assistance in enabling us to determine the condition of the internal generative organs. They may be found tolerably well developed in cases where careful examination convinces us that the uterus is wanting, and the vagina absent. And as Kussmaul very pertinently observes, the mammary glands do now and then become enlarged and developed in the opposite sex. The presence of breasts tolerably large and developed, would however inform us that the patient had arrived at the age of puberty.

2. The development of the *vulva*, presence of hairs on the pudendum, &c. The vulva may be apparently well formed, there may be the usual amount of prominence of the mons veneris, the parts may be well covered with hair, and, in fact, the external appearances may be such as are observed under normal circumstances; and yet the uterus and vagina may be wanting. Indeed, cases have been observed, as the one related by Dr. Ormerod and Dr. Quain, in which, with these external apparent evidences of womanhood and capability for marriage, not only was the uterus absent, but the ovaries were wanting. A 'small mass, apparently of a glandular structure,' found in the left wall of the narrow sac representing the vagina, was the only possible representation of the ovaries.* The patient died in an anæmic state at the age of 33, and had suffered from nasal hæmorrhages, the monthly periodicity of which seemed to point to the existence of a sort of vicarious

* *Transactions of the Pathological Society*, vol. vii. p. 271.

menstruation. The case is remarkable as showing very clearly how little relation subsists, necessarily, between the development of the external and internal sexual organs. One case I have myself seen, in which the breasts were normal, the pudendum normal, and well covered with hairs, but there was no evidence of the existence of a uterus, and hardly a trace of a vagina.

When it is an object to ascertain by examination whether the uterus and vagina be present or not, the method to be pursued is the following: a catheter is to be introduced into the bladder, which should not be empty at the time the examination is made, and held lightly but firmly therein. One or two fingers of the left hand, well oiled, are then to be introduced as far as possible into the rectum. The catheter can now be felt by the extremity of the finger in the rectum, and a means is at once afforded of judging of the nature of the tissue intervening. If the uterus be absent, the catheter can be felt by the finger high up in the pelvis, and no intervening hard substance, such as that constituted by the uterus, can be detected; but it is necessary, in order that this point may be conclusively made out, that the catheter in the bladder and the finger in the rectum should be pushed as far as possible, for if the catheter be only just made to enter the bladder, the point of the instrument is, under ordinary circumstances, readily felt by the finger in the rectum. The uterus would of course be sought for in the first instance in the middle line of the body, but if a careful examination failed to discover any hard substance in that position, it should be sought for on each side. Where the uterus is double, it is very frequently not symmetrical, the one cornu being large and well developed, the other small and imperfect; and in such a case the larger cornu lying, as it would do, rather to one side, might not at first be made out, or if made out, might be mistaken for something else (Kussmaul). This double or combined examination by the rectum and bladder, is thus capable of giving important information, for although we might not be able to affirm after making such an examination that the uterus was entirely absent, we could hardly fail of detecting the presence of an enlarged and distended uterus, supposing the uterus to be so enlarged and distended. The uterine sound is, in some cases, a better instrument to introduce into the bladder than the female catheter, as it is more under command of the hand, and can be bent to any required degree.

The method of examination in question also enables us to form some idea as to the condition of the parts in suspected absence of

the vagina. Thus, in cases where the only external evidence of the existence of a vagina is the presence of a small blind sac which is just capable of receiving the point of the sound, or in cases where the sac is large enough to admit the little finger for an inch or two, the combined examination furnishes data of some value. If the parts intervening between the point of the instrument and the finger be very thin, this gives reason to think that there is no vaginal canal between; but this is by no means conclusive evidence of the fact. If the uterus were found very small, or absent altogether, the vagina would be more likely to be also absent. But, on the other hand, supposing the uterus were found to be present, the septum between the rectum and the catheter being apparently very thin, it would require some care to decide as to the presence or absence of the vaginal canal in this thin septum. In some cases the uterus is pretty well formed, and becomes distended with menstrual blood, which cannot escape, because the vagina is absent at some part of its course; and the vagina may be nearly the natural size at its extreme upper and lower portions, the intermediate portion being wanting; or it may be, as is the more common case, very small below, and absent above.

DOUBLE VAGINA.

There are a few cases on record in which the canal of the vagina has been found double, each of the canals being respectively in communication above with a separate uterus. These are cases in which there is a complete separation of the uterus into two. The most common of the abnormal conditions of the uterus is that in which the cavity is partly divided into two, the next common is that in which the uterus is completely double; and the least common cases of all, are those in which there is a double uterus and a double vagina also. A marked instance of the latter kind is related by Negrier.* The diagnosis of this rare condition would not present any considerable difficulty.

ALTERATIONS IN THE DIRECTION OF THE VAGINAL CANAL.

The most remarkable alteration in the direction of the canal, is that which is produced by retroversion of the pregnant uterus, or by retroflexion of the organ in the non-gravid state. When either of these conditions is present, the canal of the vagina is found to pass directly upwards behind the pubes, and close to it. Dislocation of the canal to one side, together with lengthening, is found in

* *Recueil de Faits pour servir à l'Histoire des Ovaires*, p. 58.

cases of ovarian tumours, or of large fibrous tumours of the uterus, which have risen into the abdomen. And lateral dislocation, unaccompanied by lengthening of the canal, exists in cases of ovarian tumours which are still in the cavity of the pelvis. A displacement of the upper part of the vaginal canal directly backwards and upwards, is sometimes observed in consequence of anteversion of the uterus; in extreme distension of the bladder the upper part of the vagina may also be pressed backwards.

ALTERATIONS OF SENSIBILITY OF THE VAGINAL CANAL, OR
OSTIUM VAGINÆ.

Spasm and Hyperæsthesia.—In making an examination by means of the finger, it may be found that the entrance of the vagina is extraordinarily sensitive, the slightest touch giving rise to great discomfort; and in some cases this is so extreme, that an examination is hardly practicable. The condition in question is really a hyperæsthesia of the part, dependent not always on the same cause. It has been described by various names. Recently Drs. Marion Sims, Debout, and others, have redirected attention to it, especially as a cause of sterility, and as interfering with sexual intercourse. It appears that in many of the cases recorded, the parts are more sensitive to a slight touch than to more rough handling. The extreme sensitiveness is mostly accompanied by a painful contraction of the vaginal sphincter—hence the terms ‘vaginal spasm,’ ‘vaginismus,’ which have been applied to it. The diagnosis of this condition is easy; the difficulty experienced in introducing the finger is dependent on the spasmodic contraction of the muscles. Some attention is, however, requisite to determine the actual cause of the condition in question. It appears to be most commonly present in individuals whose nervous system is generally in an easily excitable state, a slight local change being sufficient in them to give rise to this affection. And irrespective of the presence of this predisposing general condition, local changes of some kinds seem sufficient to produce it in a few instances. Lastly, in some cases, this hyperæsthetic spasmodic condition may be the sole discoverable morbid symptom or state, the individual being, in other respects, apparently in perfect health. The affection is probably in some cases strictly a mental one. In order to come to a just conclusion as to the cause in particular instances, it is necessary carefully to examine into the previous history of the case: the mode of life, habit of thought,

&c., must be enquired into. Dr. Ferguson states that in cases of 'irritable uterus,' one of the seats of this neuralgic malady is the vagina itself, which is so exquisitely tender as to render intercourse intolerable.* In most cases, a careful examination of the external genitals is necessary. It is Scanzoni's opinion, that the disorder especially accompanies anteversions, retroversions, flexions, or actual changes of the uterus itself, and that it is not rare in connection with spasmodic affections of the urethra, bladder, or rectum. A careful consideration of the facts recorded would seem to point to the conclusion, that although morbid local conditions, e.g., of the uterus, of the urethra, &c., may be found to be present in such cases, yet that the most important element in the case, and that which is first in order of occurrence, is usually a morbid exaltation of the nervous sensibility, generally dependent on defective bodily nutrition, or too great cultivation and use of the psychical faculties. This affection is particularly prone to occur in women of cultivated intellect, of high mental endowment; and is rare in women whose bodily powers are called into more frequent and active exercise. These considerations find an important application in practice.

Inflammatory Changes in the Vagina or adjacent Parts.—Pain and tenderness on making an examination may be due to any one of the various inflammatory affections of the ostium vaginae described in the preceding chapter. In cases of *vaginitis*, the canal is generally hot, tender, and extremely sensitive, the condition being, however, very different from that described as simple hyperæsthesia. The presence of *cancer* of the vagina is attended with pain and tenderness on examination. In *cystitis*, especially in the acute form, the vagina is tender anteriorly. The tenderness of the urethra in urethritis may be confounded with that due to vaginitis. The most important, perhaps, of the cases in which this symptom—tenderness of the vagina—is noticed, are those in which abscess forms in the pelvis, in close proximity to the vaginal canal. In these cases of *pelvic abscess*, as they are termed, tenderness, swelling, and heat of the vagina, particularly at one side of the canal, are then observed; the tenderness is in these cases limited to one spot. Circumscribed tenderness at one part of the vaginal canal will lead us to suspect formation of an abscess even when no evidence of swelling may be obtainable. (See 'Diagnosis of Tumours felt through the Vaginal Walls.')

* Prefatory Essay to the edition of Gooch's writings, published by the New Sydenham Society, p. 23.

HARDNESS OR RESISTANCE OF THE WALLS OF THE VAGINA.

A condition of the wall of the vagina, recognisable by the touch and very important in a diagnostic point of view, is *firmness*, *hardness*, and *resistance*, especially at the upper and anterior part of the canal. The vagina appears to the touch fixed, rigid, and immobile; such a condition is one of the early signs of the presence of cancer of the lower part of the uterus. The non-resistant, soft, velvety feel of the mucous membrane is wanting in such cases at the affected parts.

Cancerous disease of the vagina, is more frequently not primitive, the disease usually spreading from the uterus. When the disease has far advanced, we may find the vaginal walls very much thickened by the cancerous deposit; nodulations may be felt; and ulcerations, which, when sufficiently advanced, give rise to production of fistulous openings, are detected by the finger. The diagnosis of the cancer of the vagina is intimately connected with that of cancer of the uterus, the general symptoms present in the two cases being, for the most part, identical. Dr. West,* whose work contains some valuable statistical information on vaginal cancer, states, that in ten cases out of thirteen the form of cancer witnessed was fungoid; in the other cases it was epithelial.

An account of the various forms of *prolapsus of the vagina* will be given further on.

VAGINAL FISTULÆ.

In cases where the existence of *fistulous communications between the vagina and the bladder, or between the vagina and rectum*, are suspected, an examination of the vaginal canal by means of the speculum is called for, in order to ascertain the existence of the unnatural communication in question, and its size and position.

The method of examination to be pursued is to place the patient on the hands and knees, the lips of the vulva are then to be separated by the hands, and the speculum invented by Dr. Marion Sims to be introduced. This speculum is a flat piece of metal bent at a right angle at two points, the part inserted in the vagina having the form of a duck's bill, and it is an improvement on the old univalve instrument. By means of this instru-

* *Op. cit.* p. 637.

ment, the perinæum is drawn upwards, the vagina distended, and a clear view afforded of the roof of the vagina. Hilliard's speculum is so constructed as to enable the examiner to dispense with assistants. The fistulous communication may be found in the canal of the urethra—urethro-vaginal fistula—or implicating the lower part of the bladder itself; the exact position, as also the size of the opening, are open to great variation. If any difficulty be found in detecting the fistula, the proper course is to inject the bladder with a coloured fluid, and to watch for its escape into the vagina. In cases where the patient is the subject of involuntary micturition, and no fistula is found between the bladder and the vagina, the possibility of the existence of a fistulous passage between the bladder and the uterine cervical canal must be considered. By injecting coloured fluid into the bladder, and observing its escape from the uterus, the fact of the existence of such a communication would be established. In cases of suspected recto-vaginal fistula, a careful inspection of the septum between the vagina and the rectum should be made, the patient lying on the back, and the univalve speculum used. The fistula is mostly found to be situated near the anus, but in cases of fistula due to cancerous ulceration extending from the uterus to the rectum, or *vice versâ*, the opening is higher up.

ALTERATIONS IN THE COLOUR OF THE VAGINA.

A very remarkable alteration in the colour of the lining membrane of the vagina is usually observed in *women who are pregnant*; and the presence of the alteration in question is a valuable sign of gravidity.

For a knowledge of this sign of pregnancy we are indebted to Kluge and Jacquemier. The statements of these observers have received confirmation from extended observations on the subject made by Dr. Montgomery.* According to the latter author, the shade of colour presented by the vaginal mucous membrane is a *livid, dusky hue*, 'altogether different from the shade of colour seen in ordinary vascular congestion, even when intense, or in cases where there are varicose veins,' and it is not capable of being simulated by any other kind of congestion. The alteration in colour affects the mucous membrane at the inside of the nymphæ, near the orifice of the urethra and the clitoris, and becomes more marked as we ascend towards the upper end of the vagina and os

* *Signs and Symptoms of Pregnancy.* 2nd ed. p. 239.

uteri. The alteration is thus most evident in the latter situations. It is seen in patches, not being uniformly diffused. Hæmorrhoids will not produce this colour of the vagina. Dr. Montgomery had not seen an instance in which it was clearly visible within the first two months; it was frequently not developed until the fourth or fifth, and was sometimes hardly perceptible at all; but he had not seen a single instance in which its perfect condition, as observed in healthy pregnancy, was simulated in any other state of the system.*

The absence of the dusky, livid hue in question is thus not indicative absolutely of absence of pregnancy, but its presence, when well marked, appears to be a sure sign of pregnancy; and one moreover which may be available at a very early period of gestation.

TUMOURS PROJECTING AT OR BEYOND THE OSTIUM VAGINÆ.

SOFT NON-RESISTANT TUMOURS.

A soft *fluctuating* tumour presenting itself at the ostium vaginae may be constituted by a *prolapsed bladder* (cystocele), the cervix of the uterus being very generally in such cases prolapsed together with the bladder. Or there may be *prolapsus of the vaginal wall in conjunction with ascites*. In the former case there is a peculiar difficulty in regard to micturition, for the patient is unable to evacuate the bladder perfectly unless the swelling be first reduced by pressure upwards. Micturition is frequent and painful, a ropy mucus is usually present in the urine discharged from the bladder. The catheter introduced passes downwards into the tumour, the nature of which is thus at once made manifest. In the case of the other, but less common, affection the tumour is also reducible by pressure, but returns on the patient resuming the erect posture. Dr. West† relates a case in which a *cyst of the vagina*, the size of an egg, projected from between the vulva, and had just the appearance presented by a prolapsed bladder. By the use of the catheter, however, the nature of the tumour was made evident.

In cases of *retention of the catamenial fluid from imperforate hymen*, there will be found between the labia on examination by the finger a somewhat tense tumour with fluid contents, and this tumour may project slightly from within the os vaginae. In such a case the absence of menstruation, and the impossibility of finding

* *Loc. cit.* p. 244.

† *Op. cit.* p. 634.

an opening into the vaginal canal would clearly indicate the nature of the case. The diagnosis of menstrual retention from this cause has been already described (see p. 32).

A soft but *non-fluctuating* tumour projecting from the vagina at its inferior part, and reducible by pressure, is present in cases of *vaginal rectocele*. In such cases the nature of the tumour is easily made out, the scybalæ in the projecting pouch of the rectum are felt by the finger: moreover the finger can be introduced in *front* of the tumour; in cases of cystocele, on the contrary, the finger passes only *behind* the tumour.

Entero-vaginal Hernia.—Another variety of tumour is that due to hernia of the intestines—entero-vaginal hernia. This is a rare affection. Some exceedingly interesting cases of the affection are related at length in the work of the late Dr. D. D. Davis.* A case of this rare affection was more recently recorded by Mr. Prescott Hewett.† The tumour projected beyond the labia, and proceeded from the floor of the vagina. The patient was suffering from symptoms of obstruction, and had not called attention to the existence of the tumour in question. The nature of the tumour is recognised by means of the tympanitic sound elicited on percussion, by the impulse produced on coughing, usually by the possibility of reduction of the tumour by the taxis, or on the patient assuming the horizontal posture. The employment of the catheter will distinguish the case from one of cystocele.

HARD RESISTING TUMOURS PROJECTING FROM THE OSTIUM VAGINÆ.

When the projecting tumour is more or less solid or firm, it is due to *inversion of the uterus*, *polypus of the uterus*, *prolapsus of the uterus*, or to *elongation and hypertrophy of the cervix uteri*. With these may be combined prolapsus of the adjacent organs, the bladder, rectum, &c. To avoid repetition, the differential diagnosis of these tumours, all of which proceed from, or are connected with, the uterus itself, will be considered in a subsequent chapter.

TUMOURS OF VARIOUS KINDS PROJECTING INTO THE VAGINAL CANAL.

In this place it is intended to include only those tumours evidently *not* connected with the uterus or with the uterine cervix, and which either grow from the vaginal walls by a pedicle or

* *Principles and Practice of Obstetric Medicine*, vol. i. p. 161.

† *Brit. Med. Journ.* Sept. 1861, p. 254.

otherwise, or are evidently intimately connected with the tissue of the vaginal walls themselves. And for the present we exclude also cases in which tumours are felt through the vaginal walls in the cavity of the pelvis, as these belong to a different category, and require a separate and distinct consideration.

The first and most easily recognisable kind of cases are those in which tumours attached by a pedicle grow from the vaginal walls into the vaginal canal, there causing various mechanical inconveniences. These growths are not common. They occur of various sizes, and of different degrees of density and hardness. Thus there is the *fibrous polypus of the vagina*, resembling the fibrous polypus of the uterus in its hardness and general shape; there is also a form of polypus described by Scanzoni—the *mucous polypus of the vagina*. Both of these tumours are easily recognised by the finger introduced into the vagina. The fibrous polypus of the vagina may be so large as to project externally, dragging the vaginal wall down with it.

The next cases are those in which rounded projections are felt on one side of the canal.

Cysts of the Vagina.—These are of slow growth, are circumscribed, not movable, give a sense of fluctuation, and project into the vagina, more or less, according to their size and shape. When large, they may, as before stated, be found projecting beyond the vulva (see p. 192). These cysts are not common; they could hardly be confounded with anything else. They give rise to difficulty and pain in intercourse, or to other difficulties. They may attain the size of a pigeon's egg, or larger, and they probably consist of enlargements of the mucous follicles.

It is more difficult, however, to distinguish the next series of cases—those in which a hard *fibrous tumour of the vagina* is found growing external to the canal, but projecting partly into it—from some other conditions. Occasionally fibrous tumours, resembling the fibrous tumours of the uterus, grow in the vaginal wall, originating primarily in the uterus according to Kiwisch, but sometimes also primarily in the vaginal wall itself according to Scanzoni. They are not by any means commonly met with in practice, but it is easy to see that there might be considerable difficulty in deciding whether a particular fibrous tumour felt in the vaginal wall close to the uterus, belonged to the uterus or not. In Dr. D. D. Davis's work are related, from Pelletan, two interesting cases: in one a fatty tumour was found growing in the recto-vaginal septum; in the other a fibrous tumour was found growing

between the vagina and the bladder, and having a diameter of six inches.* Mr. Paget† removed by enucleation a hard fibrous tumour, the size of a hen's egg, from the wall of the vagina in front of the os uteri, which had been the cause of profuse losses of blood; the tumour in question belonged to the category of cases now under consideration.

Cancerous Growths.—In cases of cauliflower excrescence of the os uteri, it sometimes happens that excrescences of a like character are found growing from the vaginal walls, in the form of villous-like bodies. The association of such growths with the cauliflower excrescence of the os uteri in question would indicate their nature.

Cases, the histories of which are illustrative of the somewhat rare affections of the vaginal wall above described, will be found in the works of Dr. West and Dr M'Clintock.

In *vaginal enterocele*, a soft tumour projects into the vaginal canal. The tumour may, if large enough, project externally beyond the ostium vaginae (see p. 193).

* *Principles and Practice of Obstetric Medicine*, vol. i. p. 137.

† *Medical Times and Gazette*, Aug. 17, 1861.

CHAPTER III.

TUMOURS FELT THROUGH THE VAGINAL WALLS ON DIGITAL EXAMINATION: INCLUDING PELVIC TUMOURS OF VARIOUS KINDS.

Enumeration of Tumours felt through the Vaginal Walls and Summary of the Diagnosis—Distension of the Bladder—Calculus of the Bladder—Distension of the Rectum by Fæces—Cancer of the Rectum—Retroversion and Retroflexion of the Unimpregnated Uterus—Retroversion and Retroflexion of the Gravid Uterus—Anteversio and Antelexio of the Uterus—Fibrous Tumours growing from, and in, the posterior part of the Cervix Uteri, or from the Uterus itself—General Enlargement of the Uterus from whatever Cause—Enlargement of Fallopian Tube, due to Distension by Serous or Purulent Fluid, by Blood, and Fallopian Pregnancy—Abdominal Pregnancy—Blood Tumours of the Pelvis (Peri-uterine Hematocoele), with Remarks on the Pathology and Diagnosis of these Tumours—Ovarian Tumours; Diagnosis of the Smaller, and of the Larger Ovarian Tumours from other Pelvic Tumours—Wolffian Cysts—Hydatid Cysts—Pelvic Abscess; Indurations and Effusions the result of Inflammation—Ossous or other Solid Tumours growing from the Pelvic Walls.

On introducing the finger into the vagina, it may be discovered that there is a tumour projecting into the canal from above or at either side, or that the wall of the vagina is pressed inwards by a tumour situated external to it; or it may be discovered that there is a tumour in the pelvis, near the vaginal canal, the shape, dimensions, &c. of which can be determined by a digital examination. From the vagina, we thus also examine—by the finger—the condition of the uterus, and especially of its lower segment.

In the present chapter it is intended to consider the diagnosis of tumours situated in the pelvis around the vaginal canal, and whose presence is perceivable by the finger. The diagnosis of ‘tumours projecting from the os or cervix uteri into the vagina’ is reserved for separate consideration.

The points to which it is necessary to direct attention in forming a diagnosis as to the nature of a pelvic tumour are, the degree of resistance imparted to the touch, the presence of fluctuation, the mobility or fixed character of the tumour, its size, its shape, and its relations to the uterus, the presence of inflammatory signs, tenderness, puffiness, or swollen condition of the parts with which the

finger is brought into contact. All of these points are important; and when by careful observation we have obtained a good idea of the physical conditions of the tumour, the diagnosis is not a matter of much difficulty, unless in very exceptional cases. In many cases it is necessary, in order to complete the diagnosis, to conjoin with the vaginal examination, an examination of the abdomen.

A tumour felt through the walls of the vagina on digital examination may be caused by—

Distension of the bladder.

Calculus in the bladder.

Distension of the rectum by faeces.

Cancer of the rectum.

Retroversion and retroflexion of the unimpregnated uterus.

Retroversion and retroflexion of the gravid uterus.

Anteversion and ante flexion of the uterus.

Fibrous tumours growing from, and in, the posterior part of the cervix uteri, or from the uterus itself.

General enlargement of the uterus, from whatever cause.

Enlargement of Fallopian tube, due to distension by serous or purulent fluid; or by blood, and Fallopian pregnancy.

Abdominal pregnancy.

Blood tumours of the pelvis (peri-uterine hamatocoele).

Ovarian tumours.

Wolfian cysts.

Hydatid cysts.

Pelvic abscess; indurations and effusions the result of inflammation.

Osseous or other solid tumours growing from pelvic walls.

SUMMARY OF THE DIAGNOSIS OF TUMOURS FELT THROUGH THE VAGINAL WALLS.

Taking the os uteri as a centre, we may group the different kinds of tumours felt through the vaginal walls, accordingly as they are found, behind, in front, or at the sides of this central point.

The tumours which may be *felt equally on all sides*—that is to say, which are not felt exclusively in one or other position—are the following:—Enlargement of the uterus; peri-uterine hamatocoele; pelvic abscess; ovarian tumours; extra-uterine pregnancy; fibrous tumours. Ascitic distension of the peritoneum should perhaps be added to this list, although there is no tumour in the strict sense of the word in such cases.

The tumours which are felt exclusively *behind* the os uteri are :—distension of the rectum by fæcal matters; cancer of the rectum; retroversion or retroflexion of the uterus.

The tumours which are felt usually, but not exclusively, *behind* the os uteri are :—ovarian tumours in their early stage of growth; distension of the Fallopian tube by fluid of any kind; Fallopian pregnancy; Wolffian and hydatid cysts.

The tumours felt exclusively *in front* of the os uteri are :—calculus in the bladder, distension of the bladder with urine, anteversion and antelexion of the uterus.

If for the word ‘behind’ the word ‘laterally’ be substituted, in the foregoing summary, the account given will still be true, for those pelvic tumours which are lateral are generally also posterior to the uteri, and *vice versâ*.

This short statement may serve to indicate the more prominent characteristics of the tumours included in the foregoing list. The several conditions in question will now be considered in detail, and their diagnostic peculiarities pointed out.

DISTENSION OF THE BLADDER.

The distended bladder sometimes forms a tumour projecting downwards and backwards into the vagina; it is more particularly observed when there is prolapsus of the uterus. In such cases the bladder may be partially protruded as far as, or beyond, the vaginal outlet. In labour, the distended bladder is occasionally protruded downwards in the same direction, and is at such a time liable to be mistaken for the bladder of membranes appertaining to the ovum. A very little attention would enable us to decide as to the nature of such a tumour. Its softness, the presence of fluctuation, its position, and the fact of its disappearance on using the catheter, are characteristic enough.

PRESENCE OF A CALCULUS IN THE BLADDER.

A stone in the bladder is readily felt through the lower wall of the bladder, by the finger introduced into the vagina; and the size and shape of the calculus or calculi can also be made out by this method of examination. A tumour of this kind could hardly be mistaken for anything else; its position, its mobility, &c., would at once suggest to the observer its nature, and an examination of the interior of the bladder, by means of the catheter or sound, would substantiate the diagnosis.

DISTENSION OF THE RECTUM BY FÆCES.

In this case a tumour is felt behind and through the vagina, in the position which the rectum is known to occupy. The distension is sometimes so considerable, that the tumour whose presence is made known to us by this method of examination is very large. It is hard and irregular, and its shape is identical with that of the rectum. Such a tumour it is hardly possible to confound with anything else.

CANCER OF THE RECTUM.

This is not a very uncommon disease in women. There may be felt behind the vagina, in such cases, a hard, irregular, nodulated tumour, evidently belonging to the rectum, and which is the seat of pain and tenderness on pressure. The cancerous mass may, and usually does, produce stricture, and accumulation of faeces in the tube above. It is generally necessary to unload the rectum by means of enemata, in order to ascertain the exact position and relations of the cancerous tumour. The pain in defaecation, the discharges of blood from the rectum, and the cachexia generally present, are the chief of the rational signs of the presence of this disease. This malignant disease may be found to have extended to the vagina itself, at its upper part. The thickening of the vaginal walls, its adhesion to the parts beneath, and its continuity with the morbid and painful enlargements around the rectum, indicate its nature. Cancer of the encephaloid variety has in some rare instances been known to grow from the recto-vaginal septum, project into the vagina, and appear as a tumour between the nymphæ. Examination of the attachments of the tumour would clearly indicate its origin, as distinguished from tumours growing from, or connected with, the cervix uteri.

RETROVERSION AND RETROFLEXION OF THE UNIMPREGNATED UTERUS.

Retroversion.—In cases of retroversion of the unimpregnated uterus, a round, hard, smooth tumour is felt behind the upper part of the vagina; the tumour is symmetrical in shape, it moves with the uterus. The cervix and os uteri are tilted upwards and forwards. The shape of the tumour, the continuity of the same with the cervix, and the characteristic displacement of the os uteri, are the chief signs. Slight degrees of this displacement are not uncommon, and, unless in exceptional cases, the displacement in

question is not attended with marked symptoms. If the uterus be large and hypertrophied, however, while at the same time it is retroverted, there may be much disturbance, functional and otherwise.

Retroflexion.—Retroversion differs from retroflexion in this respect, that whereas, in cases of retroversion, the canal of the uterus still remains nearly straight, in retroflexion it is bent on itself. In both there is a displacement of the fundus backwards, but in retroversion this is consequent on the whole of the uterine canal assuming a transverse instead of a vertical position in the pelvis; whereas in retroflexion, the cervical part of this canal may retain pretty nearly its normal direction, the canal above this being sharply bent backwards. Between the two extremes all gradations may be witnessed. Moreover, the two are frequently associated; where there is retroversion, there is usually a little retroflexion also, and *vice versâ*. The tumour felt in these cases is hard, smooth, and has the shape of the fundus of the uterus. The organ being bent backwards in the form of a retort, there is a space or fissure between the cervix and the tumour, and this is one of the chief characteristics of retroflexion. The other signs are—the distortion of the os, the lower lip of which is frequently projected considerably lower than usual, the crescentic shape of the aperture of the os, and the general displacement of the cervix forwards. The direction of the canal of the cervix is normal, as a rule at least, but the cervix is nearer the os pubis than it should be. The tumour is felt to move with the uterus, and it is usually central, but it may be a little to one side. The fundus of the uterus is usually larger when so retroflexed. Retroflexion is a condition most likely to be met with in women who have had children, or who have, at all events, been impregnated, but it appears to be occasionally congenital.

The tumour may be confounded with a fibrous tumour growing from the back of the uterus, near the cervix, or with one attached higher up, and hanging downwards behind the uterus; either of which might resemble the fundus in smoothness and hardness. The difficulty of the diagnosis is sometimes considerable: as pointed out by Dr. West, a fibrous tumour in this position may itself draw down the fundus, and produce slight retroversion. The use of the sound, however, affords the most conclusive evidence as to the presence of retroflexion of the uterus. When retroflexion is present, the sound cannot be introduced in the regular manner, that is to say, with the concavity directed forwards; but if it be held with the concavity backwards it readily enters, and the

extremity of the instrument can be felt in the centre of the tumour behind the vagina. This is of course very conclusive evidence that the tumour is constituted by the fundus of the uterus. The precautions to be taken in using the sound will be considered farther on.

RETROFLEXION OR RETROVERSION OF THE GRAVID UTERUS.

The diagnosis of this condition is peculiarly important. Behind the upper part of the vagina and cervix uteri is felt a smooth, firm, symmetrically shaped, and more or less hard tumour, which may be as large as an orange or larger according to the duration of pregnancy. It occupies a median position; it is continuous with the cervix. The os uteri is found to be softer and the orifice more widely open than usual, and the cervix is nearer the os pubis than it should be; indeed the os uteri is generally tilted high up behind the pubis so as to be reached with great difficulty. The rational signs of the presence of this condition are:—retention of urine, a symptom generally present, pain of varying degrees of intensity, the cessation of the menstrual flow, and the presence of other signs of pregnancy. There is usually some little difficulty in defæcation, but the disturbance in the function of micturition is very marked, and the bladder is occasionally enormously distended with urine which the patient is unable to expel. The latter difficulty is caused by the pressure of the tumour on the neck of the bladder.

The tumour produced by a retroflexed or retroverted gravid uterus is distinguished from the same condition of the uterus in the non-gravid state by its greater size. From ovarian cystic disease in its early stage, it is distinguished by the fact that there are signs of pregnancy in the one case, not in the other; by the condition of the os uteri, soft in the one case, hard in the other; and by the comparative rapidity with which symptoms of pressure supervene in the two cases respectively. When the gravid uterus constitutes the tumour, the symptoms show themselves with greater intensity and more quickly. The use of the sound would of course clear up all doubts, but unless the case be clearly not one of pregnancy, this instrument must not be had recourse to. The position of the os uteri is generally very different in the two cases; the ovarian tumour does not effect such an amount of dislocation upwards of the os uteri as is witnessed in the other case. From extra-uterine pregnancy, in which also a tumour may be present behind the upper part of the vagina, it is to be distinguished by the continuity of the tumour with the uterus, also by the non-symmetrical shape of the tumour in extra-uterine preg-

nancy. From fluid or bloody distension of the Fallopian tube, and from Fallopian pregnancy, the tumour due to retroflexion of the gravid uterus is also to be distinguished by its central position, its greater firmness, the continuity of the tumour with the cervix, &c.

Another condition with which retroflexion of the gravid uterus may be confounded, is retroflexion of the unimpregnated uterus, accompanied with hypertrophy of the fundus and of the uterus generally, and with or without development of fibrous growths in the posterior uterine wall. Retroversion of the uterus with a fibrous tumour or tumours growing in its posterior wall, suddenly occurred to a patient who came under my notice with enormous distension of the urinary bladder. Here the effect was pretty much the same as if the uterus had been enlarged from pregnancy and had become suddenly retroverted. The greater elasticity, smoothness, and regularity of a tumour constituted by the impregnated uterus would, however, be the distinguishing character of the one, as the hardness, firmness, and resistance would be the distinguishing characters of the other condition.

When retroflexion of the gravid uterus persists, abortion usually occurs about the fourth month, or earlier; but a case is related by Dr. Oldham* in which the displacement persisted during the whole term of pregnancy. In endeavouring to make out the diagnosis of a case of retroflexion, the examination by the rectum is of great value.

ANTEVERSION AND ANTEFLEXION OF THE UTERUS.

If a tumour be felt through the vaginal walls in front of the cervix uteri, hard, smooth, and rounded in shape, while the os uteri itself is thrown somewhat backwards, the case may prove to be one of anteversion or anteflexion. The use of the sound, with the precautions to be mentioned more particularly by and bye, would give us correct information as to this point, and prevent our falling into the error of Levret, who mistook an anteverted fundus for a calculus in the bladder. There is a difference of opinion as to the comparative frequency of anteflexion and retroflexion, but there can be no doubt that we meet with the latter condition more frequently in practice. The uterus has naturally—a fact particularly insisted upon by Dr. Henry Bennet—an inclination forwards. It may be that anteversion is really most frequent; but, if this be the case, it certainly gives rise to less urgent symptoms than the other

* *Obstetrical Transactions*, vol. i.

condition. Further remarks concerning the pathology of flexions of the uterus will be found in the chapter on Treatment.

FIBROUS TUMOURS GROWING FROM AND IN THE POSTERIOR PART OF THE CERVIX UTERI, OR FROM THE UTERUS ITSELF.

It may be a matter of difficulty sometimes to distinguish between this condition and retroflexion of the unimpregnated uterus. In both there is a tumour, hard, smooth, and resistant, felt behind the upper part of the vagina and moving with the uterus. If a fissure be felt between the tumour and the cervix, the case is probably one of flexion of the uterus. It is not a common circumstance for tumours to grow in this position, the more usual seat of fibrous tumours being higher up than the cervix. In cases where there is any doubt, the use of the sound generally affords conclusive data. (See 'Examination by means of the Sound.') Fibrous tumours growing from the uterus higher up and hanging down into the utero-rectal pouch might be mistaken for retroflexion of the uterus, provided that the shape of the tumour resembled that of the fundus of the uterus. The mobility of the tumour, and its want of connection with the lower part of the uterus, would distinguish it from that due to fibrous tumour growing lower down. There is generally, in such cases, a want of symmetry in the tumour which is sufficient of itself to distinguish it from retroflexion of the uterus.

GENERAL ENLARGEMENT OF THE UTERUS, FROM WHATEVER CAUSE.

When the cavity of the uterus is considerably distended by the presence of a foetus, by a large polypus, or from whatever cause, a tumour may be felt behind or in front of the upper part of the vagina. In cases of pregnancy, the recognition of the presence of this tumour is of the greatest possible assistance in establishing the diagnosis.

We have now to consider the diagnosis between enlargements of the uterus from whatever cause and other conditions. The determination of the *nature* of such enlargement will form a question for subsequent consideration.

When the tumour felt behind the upper part of the vagina is caused by an enlarged uterus, as in the case of pregnancy at the third or fourth month, it is rounded, smooth, and central, there is an evident continuity between the tumour and the cervix, and, moreover, the tumour spreads out behind, to the sides and to the front of the cervix equally. It is not possible to detect any line

of division, or any depression between the two parts; the cervix constitutes, in fact, the centre of a rounded symmetrical body, the shape of which, together with the absence of irregularities on the surface, show that it can be nothing but the uterus. If a rounded smooth tumour were felt behind the cervix, and no corresponding enlargement in front of the cervix, the only possible conclusion would be, either that the tumour felt posteriorly was not the uterus at all, or that it was the uterus bent backwards, as described above (p. 200).

The question—What is the nature of the enlargement of the uterus? supposing such to be present—is usually to be resolved by a combined vaginal and abdominal examination. In some few cases the vaginal examination alone is sufficient. The vaginal examination of the ‘enlarged uterus’ will be separately considered presently.

ENLARGEMENT OF THE FALLOPIAN TUBE

gives rise to a rounded, somewhat pyriform elastic tumour, which may be felt through the upper vaginal wall. The Fallopian tube occasionally becomes distended, in rare instances very greatly so, by a collection within it of *serous*, *purulent*, or *bloody fluid*: the distension may be due to development of the ovum within the canal—*Fallopian*, or *tubal pregnancy*. The tumour constituted by a distended Fallopian tube is usually of a somewhat lengthened form, resembling in shape a portion of distended intestine. If the whole Fallopian tube be equally affected, a tumour of a semi-circular, sausage-like form, results. The distension may be limited to one or other end of the tube; one or both tubes may be affected. In Dr. Farre’s work * will be found figured a specimen in which both tubes were largely distended with fluid.

The enlargement of the Fallopian tubes constituted by any of the conditions mentioned, is distinguished from other tumours in the neighbourhood by the following characters:—

The tumour, when of Fallopian nature, is rounded, movable, well-defined, separable (usually) from the uterus; situated in retro-uterine pouch, a little to one side. Fluctuation may be evident in the tumour; it is elastic to the feel. There may or there may not be tenderness on pressure. Difficulty and pain in defæcation, ‘pressure pains’ in various parts (see p. 134), pain in walking—these are the symptoms more often observed.

* *Cycl. Anat. and Phys.*, art. *Uterus*.

The tumours with which the distension of the Fallopian tube is most likely to be confounded are—ovarian cystic tumours in their early stage of growth, Wolffian cysts, hydatid cysts, and abdominal pregnancy. There are no means of absolutely distinguishing between a chronic, serous, or hæmorrhagic distension of the Fallopian tube and the affections in question: in all, the course of the affection may be slow; in all, there may be trifling inconveniences experienced by the patient; and on the mere shape and size of the tumour no absolutely reliable conclusion can be formed. When Fallopian pregnancy is present, the course of the affection is different; in almost all cases the affection ends fatally, by rupture of the tubes, and hæmorrhage into the abdominal cavity, at the second or third month of gestation, rarely later. When we have to do with a chronic enlargement of the tubes, this latter condition may be dismissed from the consideration. The diagnosis of tumours produced by distension of the Fallopian tube by fluid, from other tumours, will be again considered under ‘Examination of the Abdomen.’

We may now consider the diagnosis of the various kinds of distension of the Fallopian tubes, one from the other.

In *Fallopian pregnancy*, the patient is usually known or suspects herself to be pregnant; the tumour grows continuously and pretty quickly, the uterus simultaneously enlarges, almost to the same degree as if the ovum were within it. Menstruation is not so constantly absent as in ordinary pregnancy. The os uteri presents the conditions met with in pregnancy. Rupture of the Fallopian tube, escape of the fœtus into the abdomen, and death, are the ordinary issue of these cases, the accident generally occurring before the middle period of gestation has arrived: practically, cases of Fallopian pregnancy are for this reason rarely diagnosed during life. The fœtus may, however, die, and undergo mummification within the tube. This happened in a case which was recently brought before the Obstetrical Society of London, by Dr. Tyler Smith, and the case had the further peculiarity, that in a second pregnancy, the second fœtus became developed in the same tube, and by the side of the mummified fœtus.

As bearing on the subject now under discussion, it should be remarked, that it has been shown by Kussmaul, that in many of the cases reported as cases of tubal gestation, the condition actually present has been defective development of the uterus, this organ being divided into two, and the ovum developed in one cornu of this double uterus. One cornu may be larger than the other;

and when the ovum is developed in the imperfectly formed or lesser cornu, rupture almost invariably takes place; but when the ovum is developed in the more perfect cornu, pregnancy may proceed normally. Hence we may meet with cases in which the cavity of the uterus does not appear to contain an ovum, but in which a tumour containing an ovum is detected close to it, and yet the case may not be one of Fallopian pregnancy in the true sense of the word, but of pregnancy in one cornu of a bilocular uterus.

Distension of the Fallopian Tube by Serous or Mucous Fluid.—This occurs for the most part in old people; the distension occurs slowly, gives rise to few symptoms, unless in those very rare cases in which the size is very considerable, and is rarely diagnosticated during life. To this condition the term Fallopian dropsy especially applies. From Fallopian pregnancy it is distinguished by the foregoing characters. From other forms of Fallopian distension, from small ovarian tumours, Wolffian cysts, or hydatid tumours, it would be distinguished with more difficulty.

Distension of the Fallopian Tube by Blood.—This may be produced by imperforate hymen, or by imperforate os uteri, and may occur in all cases when the outlet of the uterus below is occluded in any way. Thus it is not rarely associated with menstrual retention; the blood secreted in the uterus, or in the tube itself, or possibly blood arising from the ovary, distending the tube in common with the uterus. In a case of menstrual retention, with distension of the uterus, the presence of a tumour in the pelvis by the side of the uterus, and having the shape of the enlarged Fallopian tube, would suggest the presence of distension of the tube with blood. But the Fallopian tube may be distended with blood in cases where there is no distension of the uterus of a like character. A fibroid tumour situated at the junction of the tube and the uterus, and blocking up the canal, was the cause of the distension in a case related by Favel, and quoted by Bernutz and Goupil.* Occlusion of the tube at this situation from other causes may doubtless produce the same result. Dr. Farre states that he has found accumulations of blood in tubes closed at both ends, and in cases where death has occurred during a menstrual period; conclusively showing, as he remarks, that the menstrual fluid is supplied in part by the wall of the Fallopian tube.† Thus we see that distension of the Fallopian tube with blood may be associated with menstrual retention from

* *Op. cit.* tom. i. p. 168.

† *Op. cit.* p. 618.

imperforate hymen, with imperforate os uteri, or with imperforate condition of the tube itself. Hæmorrhage into the tube, as a result of tubal foetation, is also a possible cause. In a specimen recently submitted to me for examination, the Fallopian tube contained a large coagulum. The foregoing observations are sufficient to indicate how the diagnosis of a case of accumulation of blood in the Fallopian tubes would be arrived at.

Purulent Collections in the Fallopian Tubes, are the result most frequently of puerperal disorder, and occur therefore chiefly after labour, but they may follow inflammation of the uterus, or result from operations on the generative organs; they may occur idiopathically, and in connection with chronic inflammation of the interior of the uterus; they may also result from stricture of the os uteri, whereby escape of fluid formed in the uterus is prevented. In the puerperal class of cases, pus may collect in, and distend, the Fallopian tubes, and may finally regurgitate into the peritoneal cavity. This is one of the modes of origin of puerperal peritonitis.*

ABDOMINAL PREGNANCY.

In cases of abdominal pregnancy, the ovum may become fixed and encysted at the lower part of the pelvis behind the uterus, and between it and the rectum, and may in this position give rise to a tumour of a rounded elastic character. Symptoms, such as bearing down behind, pain and discomfort in the pelvis, show themselves earlier than in the case of Fallopian pregnancy.

The signs of extra-uterine pregnancy, particularly of abdominal pregnancy, are peculiar. There is suppression of the menses, but there are often (and this is a circumstance very likely to mislead) irregularly recurring hæmorrhages, which may be considered to be menstrual. The woman, from her sensations and condition, generally thinks herself pregnant. The patient may suffer greatly from pain during the whole course of the pregnancy: this pain was most severe in a case which fell under my own observation.

The diagnosis of abdominal pregnancy, the tumour being in the pelvis, from Fallopian pregnancy, would be difficult at an early period; but if the pregnancy have advanced beyond the middle period, the presumption is, that the foetus, if not in the uterus, is

* Dr. Barnes has related a case in which this accident occurred—appended to which case is a complete account of what is at present known on this subject—in vol. iii. of the *Obstetrical Transactions*, p. 419.

not in the Fallopian tube. The possible case of double uterus, before mentioned, should be borne in mind. In a very extraordinary case recorded by Mr. L. R. Cooke, there was simultaneous intra-uterine and abdominal pregnancy, the pregnancy going on to full term.*

Occasionally we have to do with a tumour behind the uterus, which is constituted by the *remains* of the fœtus after abdominal pregnancy. These remains, enclosed in a sac which becomes adherent by inflammation to the adjacent peritoneal surface, and which may be recognised by the exploring finger as bones, may continue undischarged for months, or even for years. Such a case is related by Dr. Drage.† There was a tumour in the position above indicated, which was found to contain fœtal bones. These remains were, by the adoption of suitable measures, removed. The pregnancy of which they were the evidence, dated from a period of upwards of three years previous. In a case related by Dr. Brandt,‡ a bony tumour, containing the remains of a fœtus, remained in the abdomen for fifty-four years; the patient had borne two children naturally since she became pregnant with the fœtus which was afterwards retained.

BLOOD TUMOURS OF THE PELVIS; PERI-UTERINE HEMATOCELE.

Those tumours felt through the vaginal walls, on digital examination, and constituted by the presence of blood, or masses of blood—coagulum in various stages of transformation, and of very various size—are included under the above head.

The tumour so constituted has, as a rule, the following general characteristics:—its form is rounded, it is often tolerably well defined, it may be hard or soft, according to circumstances presently to be pointed out; usually limited to one side of the pelvis—the posterior and lateral aspects more particularly—it may be less circumscribed, and in some cases the tumour is felt to surround the uterus on all sides. The vaginal wall is pressed downwards, and its canal thus encroached upon, according to the size and relations of the tumour.

The physical examination of the tumour, as effected by a vaginal digital examination, may, or may not, enable us to arrive at a diagnosis of its nature, but the physical examination, the

* This case will doubtless be inserted in the forthcoming volume (vol. v.) of the *Obstetrical Transactions*.

† *Obst. Trans.* vol. ii.

‡ *Ed. Med. Journ.* Sept. 1862.

symptoms presented by the patient, and the history of the case, all taken together, usually render the formation of a diagnosis comparatively easy.

The nature of these blood tumours, the symptoms attending their evolution and progress, must first be considered. The diagnosis of these tumours from others will then be pointed out.

The terms 'pelvic hæmatocele,' 'peri-uterine hæmatocele,' 'retro-uterine hæmatocele,' 'pelvic hæmatoma,' have been of late years used to designate an effusion of blood in the neighbourhood of the uterus, giving rise to formation of a tumour. The occurrence of hæmorrhage in and amongst the pelvic viscera in women, although spoken of by several of the older authors, has only within the last fifteen years received that amount of attention which its importance deserves. To Bernutz,* Nelaton, and Voisin of Paris, the profession is indebted for first indicating and explaining the nature, course, and symptoms of this affection. In this country, Dr. Tilt was the first to draw attention to the matter; Dr. West has written an admirable account of it in his work on 'Diseases of Women;' Dr. Simpson has described it, in his ordinary felicitous manner, in his 'Clinical Lectures.' In the works of Voisin† and Bernutz,‡ and in the admirable essay on the subject still more recently published by Dr. McClintock,§ will be found the best representation of the present state of knowledge on the subject, but valuable monographs and observations have been published thereon by Dr. Madge,|| Dr. Matthews Duncan,¶ and others. The views at first entertained and expressed respecting this newly discovered pathological condition were somewhat opposed to each other, and there is still much difference of opinion as to the nature, seat, and mode of origin of the hæmorrhage, although the difference is really less than it has been represented to be.

Bernutz, whose claims to be considered as the first modern observer and expounder of this pathological condition stand before all others, rightly insists on the mischief which has arisen from treating the effusion, clot, or tumour, as a sort of entity, and of the confusion which has arisen from speaking of pelvic hæmatocele or uterine hæmatocele as a disease *per se*; whereas it is really but

* See *Arch. Gén. de Med.* 1848.

† *De l'Hématocèle rétro-utérine, et des Épanchements sanguins non-encystés de la Cavité Péritonéale du petit Bassin.* Paris, 1860.

‡ *Clinique Médicale sur les Maladies des Femmes*, vol. i. 1860.

§ *Clinical Memoirs on Diseases of Women.* Dublin, 1863.

|| *Obstetrical Trans.* vol. iii.

¶ *Edinb. Medical Journal.* Nov. 1862.

a symptom, a consequence, an effect, or an accident, as the case may be, of exceedingly varying conditions. We find that one kind of hæmorrhage in a particular situation, is termed a 'true' hæmatocele by one author, while another author limits the term hæmatocele to an effusion of blood in another locality. The fact is, that if we retain the use of the term 'hæmatocele' at all, it must be understood that no particular disease is meant thereby; it is a convenient term, as indicating simply presence of effused blood: and if we use the double term 'peri-uterine hæmatocele,' which is on the whole a convenient one, it must be understood to imply effusion of blood in the neighbourhood of the uterus. It will so be used in this place, and without restriction of any kind as to the precise seat of the effusion.

The circumstances leading to the pouring out of blood in the neighbourhood of the uterus will be presently mentioned; but, in the first place, it will be advisable to point out the anatomical positions in which hæmorrhage is liable to occur.

INTRA-PERITONEAL HÆMORRHAGE.—Hæmorrhage may take place into the peritoneal cavity, the blood collecting in the pelvis, and lying on and between the pelvic viscera; and the blood may come from some vessel in the pelvis itself, or from a vessel situated in the abdominal cavity. The blood collects in the pelvic cavity, which it fills more or less completely, according to the quantity poured out. If the effusion proceed rapidly, it may kill the patient before coagulation of the blood has taken place. If the effusion take place slowly, the blood effused generally coagulates, and the coagulum becomes limited to a certain situation by the inflammatory products, or by the free border of the coagulum only. In this case it is spoken of as encysted; but, under some circumstances, no such limitation of the blood occurs. It will be obvious that, when the blood has coagulated, the coagulum will form a tumour having certain physical characters, and which, if the coagulum be in the pelvic cavity, may be felt through the vaginal walls on digital examination. If the examination be made early, fluctuation may be perceivable, but it is often difficult to make out fluctuation satisfactorily. If the examination be made soon after the coagulation has occurred, the tumour will be soft and ill-defined, and the more so as it will be probably at this time surrounded by serum not yet absorbed. If the examination be made later, the tumour will be harder and more resistant. Later still, it will be found either to have become reduced in size, or to have undergone a softening process or liquefaction. The blood

drawn off by operation has a syrupy consistence, and a peculiar odour, compared by Dr. Matthews Duncan to that of faded and slightly decomposing flowers. It is obvious that the physical aspects of the tumour, as felt through the vaginal wall, will vary according to the amount of blood effused, and the quickness with which this occurs. A large and sudden hæmorrhage would leave behind it a clot filling the whole pelvic cavity, dipping down behind and at the sides of the uterus, as far as the peritoneum extends. The uterus would in such a case be felt to be imbedded in a mass of semi-solid substance. On the other hand, a small hæmorrhage would give rise to a coagulum, which might be felt only in one part of the pelvis—e. g. behind the uterus, in the Douglas fossa, ('retro-uterine' hæmatocele). The effect produced on the patient by hæmorrhage into the peritoneal cavity, appears to vary very considerably. In one case—and this is perhaps the rule—it sets up violent inflammatory action; in another, the presence of the blood is better tolerated. The effect on the patient *quoad* the loss of blood necessarily varies according to the amount lost, and the ability of the patient at that particular time to bear losses of blood of any kind. It is almost unnecessary to point out, that when a large coagulum occupies the pelvic cavity, it gives rise to the 'pressure' signs observed in the case of other pelvic tumours, such as difficult defecation, difficult micturition, a sense of fulness, pains in the lower extremities, &c.

It may or may not be the case, that very slight hæmorrhages into the pelvic peritoneal cavity occur frequently, and are clinically unrecognised. When, however, the hæmorrhage is considerable, the symptoms produced are of a peculiar kind, most alarming, most intense in character. The symptoms are those of hæmorrhage and of peritonitis combined. Thus the patient becomes deadly faint, and at the same time complains of an agonising pain in the lower part of the abdomen. The fainting is more or less continuous, but it is greatly more intense at intervals. And so with the pain, this being generally continuous, but being exacerbated to an extreme degree at times. It is characteristic of the attack that it begins suddenly, and most frequently it happens that the attack is coincident with a menstrual period. There may be, adopting Dr. M'Clintock's arrangement of the symptomatology, three modes of invasion. 1. The sudden and acute form. 2. A form less severe and overwhelming in its effects, life not being so evidently threatened. 3. A sort of chronic form, the symptoms being developed gradually, or in succession.

EXTRA-PERITONEAL PELVIC HÆMORRHAGE.—The term ‘thrombus’ has for some time been used to designate a blood coagulum in the cellular tissue of the labia, or near the external outlet of the organs of generation; and the term is obviously quite as applicable to the coagulum, resulting from hæmorrhages taking place higher up, that is to say, in the cellular tissue near the uterus, in the broad ligaments, &c. Whereas, however, the thrombus of the external generative organs has for a long time been well known, it is not so with the thrombi of the internal generative organs. It is now known that an effusion of blood near the uterus in the situations above indicated is not uncommon. By some authors, the effusion (or its coagulum) is spoken of as a ‘thrombus,’ by others it is considered as a ‘peri-uterine hæmatocele.’ Thus Bernutz only admits intra-peritoneal hæmorrhages as causes of hæmatocele, and considers extra-peritoneal hæmorrhages as instances of thrombus. This author, it should at the same time be remarked, believes that the extra-peritoneal form of hæmorrhage is comparatively rare. It is more convenient, however, to discard this word thrombus, and, whether we agree with Bernutz or not as to the rarity of extra-peritoneal hæmorrhage, to apply the term ‘peri-uterine hæmatocele’ to hæmorrhages having this anatomical position. If the nosology of the subject were to be considered *de novo*, there would be much to be said in favour of a different nomenclature.

The seat of the extra-peritoneal hæmorrhage now under consideration, is the connective tissue around the uterus and ovaries and pelvic viscera generally. The position and shape of the tumour resulting from coagulation of blood so effused, necessarily varies according to the precise situation of the bleeding vessel. Thus if the bleeding vessel be in front of the uterus, the tumour will likewise be in front; and if the bleeding continue, the coagulum may extend from this point laterally on each side. If the bleeding vessel be behind the uterus, the coagulum will be there evident. The pelvic viscera become dislocated by the tumour resulting from the coagulation to a degree necessarily dependent on the extent of the hæmorrhage. The tumour may extend from the pelvis high up into the abdomen. The physical character of the tumour, as regards hardness, softness, &c., are subject to variations of the same kind, as detailed in the case of extra-peritoneal hæmorrhage. In fact, so nearly do the physical characters presented by the tumour in extra- and intra-peritoneal hæmorrhage agree, that it is hardly possible to distinguish them. The

tumour in both cases may rise high above the pelvis into the abdomen; in the extra-peritoneal form it may be extremely large. The symptoms do not, so far as can be ascertained, differ in the two cases; and that this is true may be judged of by the fact that it is hotly disputed whether in the majority of cases the hæmorrhage is intra- or extra-peritoneal. In the extra-peritoneal hæmatocele the tumour may reach lower down in the pelvis; an hæmatocele tumour found extending upwards from the vulva into the pelvis, would almost certainly be extra-peritoneal; the reflections of the peritoneum would prevent such a descent of the tumour in the intra-peritoneal form. With this exception, there appears to be hardly anything in the physical characters of the tumours in the two cases to distinguish them. The changes which are observed in the coagulum formed do not materially differ, whether the hæmorrhage be intra- or extra-peritoneal. Absorption, softening, abscess—these are effects which may equally result. A tarry, syrupy condition of the contents, is generally observed when the blood is not soon absorbed, the blood corpuscles become shrivelled and contorted, mixed up with pus cells, crystals, patches of pigment, &c. It not unfrequently happens, that the tumour, at first small, becomes enlarged at the next menstrual period, from a recurrence of hæmorrhage. Meanwhile, inflammatory action goes on, and during the progress of the combined and simultaneous effusion and inflammation, the tumour increases.

We may now pass on to the considerations of the

CAUSES OF PERI-UTERINE HÆMATOCELE,

under which term will be included all cases in which an effusion of blood takes place in the neighbourhood of the uterus, so as to constitute a tumour perceivable through the vaginal walls.

Rupture of some one of the Vessels in the Uterine or Ovarian Plexus.—Recent observers, Farre, Rouget,* and others, have described a stratum of vessels, forming a thick network, immediately external to the uterus. These vessels undergo, as Rouget has shown (see p. 123), under various circumstances, a kind of erection, in process of which they become greatly distended and enlarged. This erection occurs, in all probability, during menstruation, during intercourse, and under other circumstances. Lying beneath the ovary, in the folds of the broad ligament, there is also a rich plexus of vessels, the pampiniform

* See Rouget's essay, already quoted, in Brown-Sequard's *Journ. de Physiol.* Oct. 1858.

plexus, or bulb of the ovary,* as it is termed, and the vessels it contains are also susceptible of great enlargement. The functional activity of the uterus and ovaries is thus connected with a considerable engorgement and distension of the plexuses of vessels now referred to. The tissues of the uterus and of the ovaries are doubtless congested at the same time; but it is evident that when blood is determined to the internal generative organs, the greater part of it goes to distend the very large and numerous vessels in the uterine and ovarian plexuses respectively.

The foregoing facts have a very important bearing on the present question; they afford us the means of explaining satisfactorily why it is that hæmorrhage is liable to occur in the connective tissue around the uterus, and in the folds of the broad ligament. The clinical facts amply bear out the conclusions deducible from physiological considerations. Rupture of some one of these vessels may be produced by violent or immoderate sexual intercourse, by undue bodily exertion of any kind during menstruation, and probably under other circumstances also. When a vessel has given way, the effusion of blood may be trifling or considerable, according to circumstances. In some cases, the first hæmorrhage is slight, but under reapplication of the exciting cause it recurs, and finally a tumour of considerable size is formed. The seat of the ruptured vessel determines the position of the tumour. When the uterine plexus is implicated, the hæmorrhage is probably almost always extra-peritoneal; but if the rupture affect a vessel in the ovarian plexus, the hæmorrhage may readily occur into the peritoneal cavity, although more generally it probably occurs within the folds of the broad ligament, and is extra-peritoneal. The intra-peritoneal cases are most likely to prove fatal, apparently because there is less limit to the amount of hæmorrhage. A 'varicose' condition of the vessels in the pampiniform plexus has been noted in some cases when rupture into the peritoneal cavity has occurred; and it is rational to infer, in many cases, the existence of a chronic varicose condition of the uterine and ovarian plexus of veins.

It is probable that, in by far the majority of cases, the source of the hæmorrhage giving rise to the tumours classed under the term 'peri-uterine hæmatocele,' is that which has been now indicated. On this point, however, there is difference of opinion. In most

* For a more particular account of these erectile structures, see Dr. Savage's recently published work (Churchill: London, 1863), containing beautiful delineations of the organs in question (Plate VI.).

cases of peri-uterine hæmatocele, the patients recover, and the anatomical evidence is wanting. Dr. Matthews Duncan, who has published a valuable paper on the subject,* has well argued the question from this point of view. His experience has convinced him that the extra-peritoneal form of hæmorrhage is probably a common form of the disease, the clinical facts which have come under his observation having been opposed to the conclusion that an intra-peritoneal seat of the effusion was possible in certain of the cases related. Dr. Duncan admits, in common with other recent authorities, that the effusion is intra-peritoneal in many cases.

Lastly, clinical facts show that a tumour originally seated in the broad ligament or elsewhere may burst into the peritoneum, and secondary hæmorrhage of very serious import may thus occur.

Apoplexy and Rupture of the Ovary.—Under this head may be included some few cases of peri-uterine hæmatocele. Collections of blood may be formed in the substance of the ovary, probably seated, as a rule, in an enlarged Graafian follicle, and constituting a sort of hæmatic cyst. This cyst may become ruptured, and blood extravasated into the peritoneal cavity. The formation of these hæmatic cysts in the first instance is involved in obscurity, but the explanation of their formation is probably the following:—A Graafian follicle does not burst, as it should do, into the Fallopian tube: hæmorrhage takes place within it; it enlarges from continuance of the bleeding, and rupture occurs. I have occasionally found Graafian follicles pathologically increased in size, and containing very large clots. In certain blood diseases, hæmatic cysts of the ovary thus formed may probably attain a considerable size.

Hæmorrhage during Menstruation from the Graafian Follicle into the Peritoneal Cavity.—This class of cases is one of great interest. Normally, a certain amount of hæmorrhage—the ‘menstruation of the follicle,’ as Dr. Tyler Smith has termed it—occurs before the dehiscence takes place. The transfer of the ovule from the cavity of the follicle to the canal of the Fallopian tube, is attended probably with discharge also of some of the blood from the follicle into the tube. After dehiscence has occurred, we find a coagulum of blood in the ruptured Graafian follicle—a coagulum ordinarily the size of a nut. Now it is evident that a derangement or disturbance of this physiological process may give

* On Uterine Hæmatocele. *Ed. Med. Journ.* Nov. 1862.

rise to hæmorrhage into the peritoneal cavity. If the tube be not accurately applied to the follicle, the blood and ovule together may escape into the abdominal cavity,—when the ovule has been fecundated, such an accident may result, as the occurrence of cases of extra-uterine pregnancy proves—and if blood continue to be poured out from the interior of the follicle, the blood must either distend the follicle itself or escape into the peritoneal cavity. We have no means of knowing what is the normal amount of secretion of blood from the interior of the follicle. It has been ordinarily assumed that the quantity is trifling. There is, however, no proof of this; and indeed there are very good reasons for believing, with Gallard, that ordinarily a not inconsiderable portion of the menstrual discharge itself is derived from the follicle,* which latter, as is rendered probable from the researches of Rouget, remains closely grasped by the fimbriæ during the whole period of menstruation. If this latter opinion be correct, it will be evident that, if from any accident, the normal path for the follicular hæmorrhage—that is, the Fallopian tube—be not available, intra-peritoneal hæmorrhage will result. If the condition of the blood be such as to favour hæmorrhage—as in fevers, anæmia, chlorosis, purpura, &c.—the effects of such an accident are intensified.

The peri-uterine hæmatocele due to this case would be intra-peritoneal. The formation of an hæmatic ovarian cyst might precede the abdominal hæmorrhage.

Hæmorrhage from the Uterus and Fallopian Tubes into the Peritoneal Cavity.—When the menstrual product is prevented escaping by the normal outlet, by congenital absence of such outlet, or by acquired stricture or closure of the same, reflux of the blood may occur through the Fallopian tubes into the peritoneal cavity, and formation of a peri-uterine hæmatocele. This is a class of cases on the illustration of which very considerable labour has been bestowed by Bernutz, in the work previously alluded to.

Whatever may lead to menstrual retention may end in pelvic hæmorrhage. In the congenital cases of this kind the menstrual retention is associated with atresia of the cervix uteri, with absence of the vagina, or with imperforate hymen. In women who have menstruated, menstrual retention may occur from chronic inflammation of the cervix uteri closing the os uteri, or materially narrowing it; from traumatic influences during parturition, or otherwise; from cancer, &c. And there may be menstrual reten-

* See a memoir by Gallard, *Arch. Gén. de Méd.* Oct. Nov. and Dec. 1860.

tion in cases where a slight menstrual discharge is apparently going on; the secretion of blood in the uterus may be so great, that the os uteri is too small to allow of its escape. Hæmorrhage into the peritoneal cavity from the uterus and Fallopian tubes, one or both, may thus arise, either in connection with profuse menstruation or after parturition or after abortion.

In the more common cases the peri-uterine hæmatocele originates at a menstrual period, the hæmorrhage being preceded by suppression, or by profuse menstruation; it has almost always been noted that menstruation was previously irregular. There may or there may not be, concurrently with the internal hæmorrhage, an external one.

Rupture of the Fœtus-containing Cyst in Extra-uterine Pregnancy.—The symptoms produced by the hæmorrhage which occurs under these circumstances are generally very severe. The blood is effused into the peritoneal cavity, often in great quantity. The physical characters of the tumour produced by the effused blood resemble those observed in other cases. Frequently death occurs before the tumour has become developed and distinct. This rupture is most liable to occur when the fœtus is contained in the Fallopian tubes, and most frequently the accident happens between the second and fourth month under such circumstances. The diagnosis of these cases from cases of peri-uterine hæmatocele produced by irregular menstruation, is by no means easy (see p. 147). In cases of rupture of the tube in Fallopian pregnancy, the diagnosis frequently rests chiefly on this, that the woman is known to be, or suspects herself to have been, pregnant. The attention of the attendant is likely to be diverted from the idea of pregnancy by the losses of blood which appear to be very frequently present in extra-uterine pregnancy, and which are erroneously looked on as evidence of menstruation.

Rupture of Hæmorrhoidal Veins.—Dr. Simpson mentions a case* in which a considerable tumour situated between the vagina and rectum consisted of a coagulum—the result of hæmorrhage from one of the hæmorrhoidal vessels.

Hæmorrhage from Vessels of the Peritoneum and other Sources.—Bernutz† describes a form of hæmatocele resulting from hæmorrhagic pelvi-peritonitis. Ferber‡ has more recently, in reference to the general etiology of hæmatocele, drawn attention to the

* On Pelvic Hæmatoma. *Med. Times and Gaz.*, vol. ii. 1859.

† *Op. cit.*

‡ *Arch. f. Heilk.*, 1862, No. 5, p. 431.

possibility of hæmorrhage occurring from the capillaries formed in the false membranes covering the pelvic viscera, the false membranes being the result of local inflammatory action. This hæmorrhage is analogous to that observed by Virchow in hæmatoma of the dura mater, in which case the blood is effused between successive layers of inflammatory membrane.

Here also may be mentioned the rare accident, *bursting of an aneurism* into the abdomen, the coagulum from which might be so situated as to give the physical characters of a peri-uterine hæmatocele.

Also, cases of the kind to which Dr. M'Clintock has drawn attention, and which, so far as at present known, are very rare, viz. the effusion of blood into the tissue of the uterus itself: the cervix uteri is the part affected. These cases occur only during, or immediately after, parturition.*

Constitutional Causes of Peri-uterine Hæmatocele.—Any condition of the system at large favouring the production of hæmorrhage may alone, or concurrently with some one of the causes already mentioned, give rise to peri-uterine hæmorrhage. The presence of fevers, small-pox, &c., has in some recorded cases been associated with peri-uterine hæmatocele, the menstrual function becoming thus disturbed or disarranged in its performance. A watery condition of the blood, such as is present in anæmic individuals, chlorosis, purpura, or other blood disorders which may be considered as predisposing to the occurrence of hæmorrhage at a menstrual period, may, in the manner previously pointed out, be the cause of the peri-uterine hæmorrhage. Trousseau terms cases of this kind 'cachectic' hæmatoceles.

Diagnosis of Peri-uterine Hæmatocele from other Tumours.

The history is of the most assistance in a doubtful case. The tumour most resembles that produced by pelvic abscess. From pelvic abscess it is distinguished by the suddenness of its occurrence, by the absence of that hot, puffy condition of the vagina, characteristic of the induration stage of pelvic abscess, by the absence of constitutional fever, and by the absence of the thickened brawn-like condition of the vaginal wall (Simpson). There is rarely much tenderness in the case of peri-uterine hæmatocele, but in pelvic abscess one point is generally tender, and may be exceedingly so. In some cases, the hæmorrhagic effusion undergoes

* M'Clintock. *Op. cit.* p. 286.

after a time a sort of suppuration, and the physical characters may then be identical with those of pelvic abscess. It will thus be seen that the diagnosis of hæmatocele from abscess is at first easy, but that it may be more difficult, later. From fibroid tumour, peri-uterine hæmatocele is distinguished by its want of uniformity and comparative want of solidity. The diagnosis of (unruptured) extra-uterine pregnancy, from peri-uterine hæmatocele, may be difficult in some cases, especially when a hæmorrhagic discharge is present. In extra-uterine pregnancy the uterus is enlarged, but enlargement, or at all events elongation of the uterus, may be also observed in hæmatocele (Duncan). If the case were one of suspected extra-uterine pregnancy, at about four months, the absence of the general symptoms of hæmatocele would be confirmatory of the suspicion. Retroversion of the gravid uterus has been confounded with peri-uterine hæmatocele; but a careful consideration of the case should prevent a repetition of such an error.

Ovarian tumours in ordinary cases could not be mistaken for hæmatocele. Dr. McClinton believes that such a mistake might be made if the ovarian cyst were in a state of inflammation, and the previous existence of the ovarian tumour were unknown.

In the majority of cases, the occurrence of the symptoms at a catamenial period, their instantaneousness, and the simultaneous appearance of a tumour rather soft or fluctuating, and of tolerably defined character, pressing on the vaginal walls—these, taken together, indicate a hæmorrhage in the neighbourhood of the uterus. In those cases of peri-uterine hæmatocele, however, where the development of the tumour is more insidious, there being an absence of marked symptoms at the time of the occurrence of the effusion, the diagnosis is more difficult. In these latent cases the effusion is at first slight, and the tumour slowly increases in size.

In doubtful cases, the use of the grooved needle has been suggested by Dr. Simpson to determine the nature of the tumour. Dr. McClinton prefers a fine trochar and canula, to the latter of which an exhausting syringe can be attached. This eminent authority thinks highly of the suggestion made by Dr. Tilt of examining from the rectum and vagina at the same time, when the tumour is posterior, and we wish to ascertain the presence of fluctuation, &c. The patient being on the left side, the index finger of the left hand is passed into the rectum and the thumb into the vagina. By this 'double touch' the information required may be sometimes obtained.

Some points in the subsequent history of cases of peri-uterine hæmatocele require notice as bearing on the diagnosis of the condition in its advanced stage. Absorption of the coagulum is the most common event, and this is the most favourable termination. In some cases the blood-tumour bursts into adjacent viscera. The bowel is the outlet most commonly chosen, and the syrupy contents of the cavity then escape by stool, or flesh-like masses are passed in this manner from time to time, the tumour diminishing in size as this goes on. The tumour may burst into the vagina. It may burst also into the peritoneum, having been primarily either entirely extra-peritoneal, or else encysted in the peritoneal cavity. This latter termination is the most unfavourable, and it occurs more particularly in those cases where there is a recurrence of hæmorrhage.

OVARIAN TUMOURS.

Ovarian tumours are met with in the pelvis of all sizes, behind, in front of, or at the sides of the uterus. The position is for the most part determined by the size. A description of the physical character of ovarian tumours generally, their size, mode of growth, &c., will be given in a subsequent chapter; and the observer should be acquainted with the particulars in question, in order advantageously to consider the diagnosis of pelvic tumours from the vagina.

The larger number of cases which come before us, and in which there is a question as to the presence of ovarian disease, are cases in which the tumour has become so large as to invade the abdomen: there is an abdominal enlargement. It thus generally happens that the tumour, when it comes under our notice, is capable of being examined both from the vagina and through the walls of the abdomen.

Diagnosis of Ovarian Tumours of small Size.

When the ovary is enlarged, in consequence of the presence of inflammation, pain is always present, and on examination there is detected tenderness at the part of the vaginal wall corresponding to it. We are now and then able, in cases of ovaritis or neuralgia of the ovary, to detect the slightly enlarged ovary by digital examination; the ovary being sensitive to the touch, its position is then more easily ascertained. In the first stage of cystic tumour of the ovary, however, pain is usually absent, and there is generally nothing to suggest the necessity for a digital examination.

When the tumour attains to the size of a large orange, symptoms more or less troublesome begin, however, to show themselves. If the tumour, together with the ovary, be firmly attached within the pelvis, the symptoms will become developed at an earlier period than when the tumour is pedunculated, and when the freedom of motion it possesses is consequently greater.

When an ovarian tumour is small, it usually occupies the utero-rectal fossa, and is not quite in the middle line; growing backwards from the ovary, this is its natural position, and, when examined early enough, here the tumour is found to be situated.

In endeavouring to form a diagnosis as to the nature of a tumour we suspect to be ovarian, our first object should be to exclude the uterus from the consideration. We endeavour to move the tumour away from the uterus, and if a line of separation can be distinctly made out, we have advanced a step in the diagnosis. The sound is sometimes of great service in enabling us to ascertain the existence of this line of division when not otherwise appreciable. (See 'Examination of Uterus by Sound.') The tumour may, however, be adherent to the uterus; in this case the sound is also of service, by informing us of the direction of the uterine canal, and further, as to the shape, size, and mobility of the tumour. In the early stage of an ovarian tumour it lies behind the uterus, or at the side, owing to the anatomical relations of the ovary; and hence it could in this stage hardly happen that it should be felt in front of the uterus. If, therefore, the uterine sound were found to pass backwards, thus showing the tumour to be in *front* of the uterine cavity, it might be safely concluded that the tumour was probably not an ovarian tumour: but this observation by no means holds good in the diagnosis of cases of large tumour.

The principal diagnostic distinctions between the tumours present in the two supposed cases have been now described. In a few cases where the development of the ovarian tumour proceeds rapidly, and the tumour remains in the pelvis behind the uterus, the inconvenience and distress which are produced are so considerable as to create greater difficulty as regards the diagnosis; micturition and defæcation are seriously interfered with, and severe pains in the pelvis or in the lower extremities are experienced.

Cases of retroflexion of the non-gravid uterus might simulate small ovarian tumours. The distinction would be, that in retroflexion the tumour is in the middle line, and that the sound, curved backwards, passes into it. In ovarian tumours, the copious

hæmorrhagic or mucous discharges generally observed in retro-flexion are wanting.

From the tumour produced by presence of Fallopian dropsy, Fallopian pregnancy, or Wolffian cysts, small ovarian tumours might with difficulty be distinguished, the tumour being in all these cases chronic, and not giving rise, necessarily at least, to inconvenience. In cases of Fallopian pregnancy, the increased size of the uterus and its softness assists in the diagnosis.

In cases of abdominal pregnancy, when the cyst is situated low down in the pelvis, the tumour, in its roundness, elasticity, and other physical characters, somewhat resembles that produced by an ovarian tumour. The rarity of the affection, the presence of signs of pregnancy already alluded to, are the chief points to which attention is necessarily directed in forming a diagnosis. From hydatid cysts growing in the peritoneal cavity low down, small ovarian tumours would be probably distinguished with difficulty. The hydatid cysts are usually more firmly fixed, and move with the vaginal wall; small ovarian tumours are usually movable, and single, unless indeed in cases of double ovarian disease; whereas hydatid cysts attached to the pelvis in the neighbourhood of the vaginal canal are usually two or three in number.

The tumour produced by peri-uterine hæmatocoele differs from ovarian tumour—first, in its shape, which is usually not globular, as is the case in ovarian tumour; secondly, in its relations, it being less easily definable and separable from the adjacent parts than ovarian tumours; thirdly, in regard to the accompanying or preceding symptoms (see p. 218); fourthly, in respect to its want of mobility as compared with ovarian tumour.

Abscesses, or plastic effusion, the result of inflammation of various kinds, might, under certain circumstances, be confounded with ovarian tumour. The history of the case should, under these circumstances, be carefully looked into, when probably its real nature will become at once apparent. Lastly must be mentioned the possible case of two tumours being found in the pelvis. It occasionally happens that pregnancy and ovarian disease are observed simultaneously.

Diagnosis of Ovarian Tumours of larger Size.

What has been said hitherto applies only to the diagnosis of tumours suspected to be of ovarian origin, felt through the vaginal walls, which are of inconsiderable size, from that of a walnut to that of an orange, for instance. We have now to consider those

cases which are, clinically speaking, more common, and in which the tumour felt by digital examination from the vagina is much larger than this—in which, indeed, it is found so large as to more or less completely fill the pelvis. There may be present a very large ovarian tumour, and yet comparatively little direct evidence of its presence may be obtained by digital vaginal examination alone; and for this reason, that the tumour may have escaped altogether from the pelvis, dragging up with it the ovary, and part of the broad ligament, to become a tumour nearly completely abdominal. We have now, however, to deal with those cases in which the ovarian tumour is still wholly or in part in the cavity of the pelvis, and to point out the diagnosis of the tumour from others with which it may be confounded.

When the tumour is small, it may be impossible to obtain much information from an abdominal examination; but in the cases we are now about to consider, the tumour is so large that information is always to be derived from abdominal examination, and the diagnosis is arrived at by comparing the results obtained by each method. A large tumour of ovarian nature occupying the pelvis necessarily exercises an influence on the surrounding organs. Thus the uterus is pushed to one side, or dislocated in various directions; it may be pushed downwards or forwards by the tumour, or it may be stretched and extended, so that the cavity is materially lengthened.

The most important condition from which ovarian tumour is to be separated, is enlargement or tumour of the uterus; this distinction is not unfrequently attended with some degree of difficulty. The first point to be made out is the position of the cervix uteri, and this being ascertained, it is in most cases easy to decide whether the tumour present be constituted by the enlarged uterus or by a tumour separate and distinct from this organ. The most reliable distinction between an enlarged uterus and an ovarian tumour is the fact that in the former case the cervix uteri is in the median line, and an equal portion of the tumour is on each side of it, whereas in the other case the cervix uteri is on one side, out of the middle line, and the mass of the tumour lies to one or other side of this part of the uterus. Even this is likely, however, to mislead. When the uterus is considerably enlarged (by pregnancy, e.g.), the cervix may be high up, and difficult to reach in either case; but when a large ovarian tumour is present, it is usually thrust out of the middle line of the body. In the case of pregnancy far advanced, the vaginal portion of the cervix would be altered also in other ways still more characteristic,

as will be described in the proper place. It may happen, however, that enlargement of the uterus from pregnancy and ovarian tumour coexist in the same patient; in such a case the diagnosis would be cleared up by circumstances subsequently observed.

A good deal of variation in the relations of the tumour in the case of ovarian disease is connected with the structure of the tumour itself. If the tumour become pedunculated at an early period, it soon becomes abdominal, and there is less evidence of its presence afforded by a vaginal examination; but if it be sessile, this change does not so readily take place, and the tumour may be moulded, so to speak, below to the cavity of the pelvis, while it may at the same time spread upwards above into the abdomen.

When the ovarian tumour is large, or, at all events, when a considerable portion of such tumour occupies the pelvis, it may be confounded with retroversion of the gravid uterus, as well as with enlargement of the uterus of other kinds. In retroversion of the gravid uterus, the position of the cervix uteri is most peculiar: it is thrust upwards and forwards, and the fundus uteri forms the tumour which presses downwards in the vagina. Such a position of the cervix uteri is rare when ovarian tumour is present. Cases in which pregnancy persists as far as six months with the uterus in this unusual position are very rare, but they are cases in which such a mistake is most likely to occur.

Large ovarian tumours occupying the pelvis may be confounded also with large fibrous tumour of the uterus. In hardness and resistance they may resemble each other; but, as a rule, the ovarian tumours have greater elasticity than is the case if fibrous tumours be present. Further remarks on the diagnosis of this important class of cases will be found under the heads 'Examination of the Uterus by means of the Sound' and 'Examination of the Abdomen.'

In ascites, with great distension of the peritoneal cavity, there may be felt a tense resistant tumour at the roof of the vagina. Such a tumour, however, could hardly be mistaken for one of ovarian origin. Its greater softness and want of definition are characteristic, and the results of an abdominal examination would soon set the question at rest. The distended bladder has, in some rare cases, been mistaken for an ovarian tumour. The previous history, the results of abdominal examination, and the use of the catheter, would decide this question, should it by any possibility arise.

The diagnosis of the *nature* of large ovarian tumours will be considered under the head 'Abdominal Tumours.'

WOLFFIAN CYSTS.

Wolffian cysts are enlargements of the cyst-like pedunculated structures attached at or near the fimbriated extremities of the Fallopian tubes—the remains of certain of the ducts of the Wolffian body.* They sometimes attain the size of an apple or a small orange. On examination, the tumour arising therefrom would be found at one side of the upper and back part of the vagina, constituting an elastic, smooth, rounded and moveable body. The tumour might be confounded with ovarian tumour in its early stage. Its very slow growth, its small size, and its uniform rounded shape, are the distinguishing characters; but the diagnosis is not always easy. It is extremely rare that these Wolffian cysts attain such a size as to assume, clinically at least, any importance.

HYDATID CYSTS.

Hydatid cysts, mostly primarily originating in the liver, are sometimes found growing within the peritoneal cavity, attached at various points of the surface of this membrane, and they are now and then found low down in the pelvis, attached to the peritoneum covering the uterus or ovaries, or to that in the immediate neighbourhood of these organs. In such a position they would be recognised, on digital examination, as elastic, firm, spherical, and *fixed* tumours, one or more in number. In a case which came under my own notice, such hydatid cysts were found after death in the pelvis,† and, had a digital examination been performed during life, the tumours to which they gave rise must have been so detected. The symptoms are obscure, and one such tumour might be mistaken, either for ovarian cystic disease, or Wolffian cyst, or extra-uterine pregnancy. These tumours are very rare.

PELVIC ABSCESS, INDURATIONS AND EFFUSIONS, THE RESULT OF
INFLAMMATION.

In this important class of cases, the tumour, occupying various positions in the pelvis, may be usually detected on vaginal examination. The tumour due to this cause may occupy almost any position around or near the vaginal canal. Pelvic abscess is most frequently met with as a consequence of child-bed, after abortions, or as an effect of operations on the external

* See Farre, *op. cit.* p. 597.

† On Hydatidiform Degeneration of the Ovary. *Obst. Trans.* vol. i.

or internal generative organs, e.g., ovariectomy, incision of the os uteri, removal of polypi, dilatation of the os by sponge tents, &c.; pelvic abscess may also result from excessive sexual intercourse, wounds, &c., of the genital organs; more rarely pelvic abscess occurs idiopathically, and in connection with presence of uterine disease, polypus, fibroid tumour, or simply as the result of abdominal inflammation.

The history of cases of pelvic abscess following delivery, which cases may be regarded as typical ones, is generally characteristic: Rigors, pain more or less intense, quick pulse, irritative fever, mark the onset of the inflammatory action; but these initial symptoms may be absent, the patient gradually becoming indisposed, without occurrence of acute symptoms of any kind. Thus it is not uncommon for a patient, who may have got over the period of lying-in tolerably well, to evince three or four weeks later symptoms of general indisposition; she becomes weaker and weaker; she is emaciated, complains of pain down the legs, or in the pelvis; the appetite and digestion fail; there are occasional chills; and after these symptoms have lasted a week or two, the more decided pelvic symptoms—difficulty and pain in defæcation and micturition—are evident. If movement be attempted, pain is produced, but this is often taken to be due to mere weakness, the real mischief being overlooked. A quick pulse is, however, always present from the beginning. When we are called to the case at a somewhat later period, we find usually that there has been a good deal of pelvic pain and uneasiness, pain and difficulty in micturition and defæcation, high fever, with evening exacerbations, night sweats, hectic, diarrhoea, and all the signs of violent and dangerous constitutional disturbance; and the presence of the tumour now alluded to is perhaps the last thing which is detected, the patient's condition having previously excited great uneasiness on the part of the attendant. The tumour is generally painful to the touch; the vaginal wall covering it is thickened, indurated, and conveying a very different impression from that which is present when a tumour of another kind simply presses on the vaginal wall, and is not connected to it by inflammatory exudation, &c. The vaginal canal is hot, dry, and tender to the touch, usually at least; at the latter stage of the affection this tenderness may be absent, or at all events be much diminished. The progress of the tumour, also, is peculiar; at first it may be hard, and more or less resistant; this hardness gives place to softness, and finally to fluctuation, as pus comes to be formed within it. The mixture of hardness and soft-

ness, the presence of soft points surrounded by harder ones—these are some of the more ordinary characteristics.

The point of origin of the inflammatory action, of the swelling, and purulent deposit is certainly, in a large number of cases, the connective tissue surrounding the uterus. The connective tissue becomes the seat of an œdema, or infiltration with fluid. Dr. West, whose remarks on pelvic abscess may be studied with advantage,* considers that the condition present is identical with that termed ‘acute purulent œdema.’ Virchow has recently† described the results of his examination of the subject, and these are quite confirmatory of the view taken by Dr. West. The tissues become first swollen, then thickened, hardened, and œdematous, and a fluid issues on section. Virchow considers that the affection, when observed under epidemic influences, as in lying-in cases particularly, is a sort of internal erysipelas. In the worst cases, a diffused phlegmon results, and the lymphatics become blocked up by coagulation of their contents. Virchow speaks of the affection as a ‘diffuse puerperal metritis and parametritis.’ Some idea of the comparative frequency with which different parts are affected may be gained from Dr. West’s statement that, in 34 out of 52 cases, the broad ligament was the seat of mischief, the cellular tissue between the uterus and rectum in 14 cases, and that between the uterus and bladder in 3 cases. Pus was discharged externally in 27 of these 52 cases.

Bernutz and Goupil take a somewhat different view of the question of pelvic inflammation from that held in this country. In the second volume of the work by these authors, recently published,‡ will be found a full exposition of their opinions on the subject of ‘pelvi-peritonitis,’ an affection which, it is their object to prove, should have an important place assigned to it. Many very valuable facts have been brought forward by these authors, and which prove that inflammation, abscess, &c. of the peritoneum covering the ovarian pouch, and the fimbriæ of the Fallopian tubes, is much more common than is believed to be the case; that in addition to puerperal causes, menstrual derangements of various kinds, blenorrhagia, venereal excesses, and traumatic causes, may lead to inflammation and purulent collections in the locality in question; and they endeavour to draw a parallel between the phenomena witnessed in the male—orchitis and hydrocele—and these inflam-

* *On Diseases of Women*, op. cit.

† *Virchow's Archiv*, 1862, p. 415.

‡ *Clin. Méd. sur les Maladies des Femmes*, Bernutz and Goupil, tom. ii., 1862.

matory conditions of the peritoneum surrounding the extremities of the Fallopian tubes and the ovaries. They argue for an almost exclusively intra-peritoneal seat of the inflammation, the argument pursued being the same as in reference to the seat of the hæmorrhage in peri-uterine hæmatocele. With acute peritonitis of the pelvic cavity as the result of injuries of the generative organs during delivery, after operations, &c., we have been long familiar, but these authors endeavour to show that this peritonitis, now acute, now chronic, occurs in connection with diseases of the womb, Fallopian tubes, &c., to a greater extent than was before suspected. It is impossible to disregard the weight of evidence brought forward in favour of these peculiar views, but many of the cases which are described by Bernutz and Goupil as cases of pelvi-peritonitis would certainly be regarded by pathologists in this country as instances of abscess of the connective tissue beneath the peritoneum.

König* has made some experiments and observations on the course pursued by the effusions resulting from inflammation in the cellular tissue about the uterus, interesting in reference to the diagnosis of pelvic abscess. He found that injections of air or water thrown into the cellular tissue of the broad ligament near the Fallopian tubes, travelled primarily along the course of the psoas and iliacus muscles, then sinking into the pelvis proper—that exudations starting from the part of the cellular tissue situated antero-laterally with reference to the uterus and its cervix, passed out laterally into the cellular tissue of the pelvis, and by the side of the bladder, and then with the round ligament, towards Poupart's ligament, thence extending to the iliac fossa externally and backwards; if the starting point be the posterior part of the base of the lateral ligament, the postero-lateral parts of the pelvis are first filled, the effusion then passing towards the psoas and iliacus muscles. As to the symptoms of pelvic abscess also, König refers to some important points. Neuralgic pains are frequently present, due to pressure of the effused products on the nerves passing through the pelvis. These neuralgic symptoms vary: they are either a sensation of coldness, or increased warmth of the surfaces to which the nerve leads, an intense pain, or other altered sensation. The external cutaneous nerve of the thigh is the one most frequently affected; at other times the crural nerve chiefly, or the sciatic nerve. One symptom is almost constantly present,

* *Arch. f. Heilk.*, 1862, No. 6, p. 481.

viz. flexion of the thigh on the trunk; the patient experiences pain when the thigh is extended, owing to the distension present around the psoas muscle, and which is necessarily increased by extension. This sign is almost pathognomonic of pelvic abscess. It is often mistaken for pain due to an affection of the hip joint. With reference to the evacuation of the abscess, the bursting most frequently occurs into the intestine; into the vagina and bladder tolerably frequently. The other outlets, less common, are, by the side of the vessels passing out of the pelvis, by the side of the external cutaneous nerve, in the lumbar region, also through the ischiatic notch in the gluteal region.

In a most valuable essay on pelvic cellulitis and abscess by Dr. M'Clintock,* just published, will be also found some interesting and practical remarks. Dr. M'Clintock considers that the flexion of the thigh is indicative of inflammation deep seated in the pelvis and at its side. When the swelling was high up, or in the middle line, this flexion was not present in the cases observed by him.

Diagnosis of Pelvic Abscesses from other Pelvic Tumours.

There are some affections with which pelvic abscess may be confounded—peri-uterine hæmatocele, extra-uterine pregnancy, ovarian tumours of rapid growth (as in a case referred to by König), or which have become the seat of inflammation (M'Clintock). The history of the case is exceedingly important in reference to the diagnosis. Chronic cases of peri-uterine hæmatocele, where the tumour undergoes a process of liquefaction, offer, so far as the physical characters are concerned, most resemblance to cases of pelvic abscess. Careful scrutiny of the facts relating to the development of the tumour, of the attendant symptoms and the result of abdominal examination (as described further on), will afford means for deciding the question.

OSSEOUS OR OTHER SOLID TUMOURS GROWING FROM THE PELVIC WALLS.

There are a few cases on record, in which osseous tumours—exostoses—have been found growing from the walls of the pelvis, and forming masses of various sizes and shapes. The diagnosis of the nature of such a tumour would not probably be attended with great difficulty. Its growth is slow, it is necessarily hard and firm, and it is immoveable. There is a condition, also rare, which

* *Clin. Memoirs on Diseases of Women.* Dublin: 1863.

might be mistaken for it, viz. projection of the body of the lowest lumbar vertebra forwards into the cavity of the pelvis, due to disease of the lumbo-sacral articulation; this disease being the result of injury, or simply constitutional. Breslau has recorded* a case of the latter kind, in which it was at first difficult to say whether a hard bony tumour projecting into the pelvis and narrowing the brim, so as to prevent delivery of the child, was an exostosis or a dislocation. There was in this case angular curvature of the spine in the lower lumbar region.

Cancerous growths from the inner surface of the ilium have been noticed. Kiwisch states that he saw a patient in whom a mass of this kind, of the size of a bead, in its shape and position resembled an ovarian tumour. Hard fibrous tumours are now and then witnessed growing from the sacro-iliac symphysis into the pelvic cavity.† Denman relates a case in which an excrescence of a firm fatty substance projected from one side of the upper part of the sacrum, and was so large as nearly to fill the pelvic brim. In Dr. D. D. Davis's work‡ are related two very remarkable cases, in which large fibrous tumours were found growing from the floor of the pelvis, and occupying this part of the pelvis so completely as to interfere with delivery.

The diagnosis of these tumours growing from the pelvic walls from tumours of the viscera might present some difficulty. The object would be to determine the point at which the tumour grew, and, unless the tumour were of considerable size, this would be comparatively easy. It is to be remarked that cases of the kind above alluded to are extremely rare.

* *Monat. für Geburts.* Dec. 1861.

† Kiwisch. *Klin. Vortr.* Bd. II., edited by Scanzoni, p. 326.

‡ *Principles and Practice of Obstetric Medicine*, vol. 1, p. 142.

CHAPTER IV.

CONDITION OF THE UTERUS AS ASCERTAINED BY DIGITAL EXAMINATION.

Preliminary Remarks; Position of the Patient—Position of the Uterus as a whole; unusually low and unusually high Position of the Organ as Diagnostic of certain Conditions—Lateral Displacements of the Uterus; Causes—Mobility of the Uterus; how altered in Cases of Cancer, or by Presence of Tumours.

ENLARGEMENT OF THE UTERUS; various Causes; their Diagnosis—Pregnancy not advanced beyond four Months—Pregnancy of upwards of four Months' Duration; 'Ballottement'—Mole Pregnancy—Missed Labour—Enlargement due to Sanguineous Distension of Uterus—Dropsy of the Uterus—Physometra—Tubercle of the Uterus—Fibrous Tumour and Fibrous Polypus of the Uterus—Cancer of the Fundus Uteri—Chronic Enlargement or Hypertrophy of the Uterus; its various Causes.

THE present chapter will be devoted to the consideration of the diagnostic significance of certain altered conditions of the *uterus as a whole*, ascertained by a digital examination of the organ from the vagina. The results of digital examination of the *os uteri* will be considered in the succeeding chapter. In subsequent chapters the conditions of the uterus appreciable by other methods of examination will be pointed out. Various questions concerning the diagnostic indications derivable from physical examination of the uterus, and which have been more or less subjects of controversy, will be considered in the chapter on 'Examination by means of the Speculum.' In reference to the diagnosis of the cause of enlargements of the uterus, further remarks will be found under the head 'Examination of the Abdomen.'

In the digital examination of the uterus from the vagina, the patient is usually placed on the side. It is sometimes necessary, in cases of suspected pregnancy, e.g., to examine the patient in the standing position, in order to detect more readily increase in the size and weight of the uterus, the presence of ballottement, &c. In the case of unmarried women, with an unruptured hymen, digital examination of the uterus should be performed with care. The cases are very few in which obstruction to digital examination of the uterus due to this cause is present. The finger may

generally be introduced a sufficient distance to reach the os uteri, by exercising gentle and continuous pressure, if this mode of examination be considered absolutely necessary: distension thus effected is not permanent.

THE POSITION OF THE UTERUS AS A WHOLE.

The Uterus may be too low down in the Cavity of the Pelvis.—Normally, the length of the forefinger represents the distance of the os uteri from the vaginal outlet, that is to say, if the patient under examination be lying on the side or back. If the patient be examined in the standing position, the uterus falls lower, and will be reached more easily by the exploring finger. When, however, the uterus is lower than usual, this distance is diminished. Prolapsus is constituted by this descent of the uterus.

The several conditions which may cause an unusually low position of the uterus, and therefore of the os uteri, in the vagina, are the following:—

Early Pregnancy.—During the first three months of pregnancy, the effect of the progressive enlargement of the uterus is to give the organ an apparently lower position in the pelvis than usual; thus, in a case in which the menses have been absent two or three months, and the texture of the cervix itself is softer than usual, the fact that the uterus is lower than usual would tend to strengthen the suspicion of pregnancy. This fact is the more important as after about the third month of pregnancy the uterus is higher than usual in the pelvis. In *retroversion or retroflexion of the uterus*, also, the uterus as a whole is often lower down than usual. *Chronic inflammatory enlargement, hypertrophy of the uterus*, enlargement due to *cancer of the uterus*, or any circumstance capable of increasing the bulk of the organ, gives the uterus a lower position than ordinary. Many of the cases of prolapsus (so-called) are really cases of this kind. The diagnosis of these causes of enlargement, one from the other, will be considered presently. *Fibrous tumours of the uterus*, when small, cause a descent of the organ. In cases of large fibrous tumours of the uterus, the effect is usually precisely the reverse. *Ovarian tumours*, when small, and especially when they appear to be impacted behind the uterus in the retro-uterine fossa, push down the uterus. The opposite effect results, as a rule, when these tumours are large and leave the pelvis for the abdomen. In *ascites*, the distension of the abdomen and pelvis by fluid pushes the uterus lower than usual. *Distension of the bladder*, owing to retention of urine, may have the same

effect. Violent, continued, *straining efforts*, attendant on coughing, difficult defæcation, and the like, may have the effect of producing prolapsus of the uterus.

Apparent, and Real, Prolapsus.—In many cases of prolapsus, the real condition present is one of hypertrophy and elongation of the cervix uteri, the fundus and body of the uterus retaining their normal position, or nearly so, in the pelvis. This subject will be more fully discussed under the head ‘Examination by the Sound.’

Unusually high position of the uterus in the pelvis may be found to be due to any one of the following causes:—

Pregnancy advanced beyond the Third Month.—The uterus, now become too large to remain conveniently in the pelvis, mounts up, partially or entirely, into the cavity of the abdomen. The position of the cervix is peculiar; it is tilted backwards and upwards towards the promontory of the sacrum; the later the pregnancy has advanced, the higher is the os found to be placed. *Considerable enlargement of the uterus from any other cause, fibrous or other tumours of large size, distension of the uterus by blood, serous fluid, air, &c.* In these cases also, the uterus leaves the pelvis and the cervix is reached with difficulty. The cervix may, in cases of fibrous tumour, be twisted more or less to one side, and otherwise altered. The uterus is generally, but by no means always, drawn up by *ovarian tumours of large size* out of the pelvis, and it is at the same time dislocated more or less to one side.

Lateral dislocations of the uterus indicate the presence of tumours in the immediate neighbourhood, or in the substance of, the uterine walls, the effects and concomitant symptoms of which have been already incidentally mentioned. In a small number of cases, the lateral dislocation of the uterus is *congenital*, and nothing else of an abnormal character can be detected: lateral dislocation of the uterus does not therefore necessarily imply presence of a tumour in the immediate neighbourhood.

MOBILITY OF THE UTERUS.

Normally, the uterus enjoys a certain degree of mobility. The vaginal part of the cervix, when pushed by the finger, is moved with ease to one or the other side, or upwards and downwards, to a limited extent, the body of the uterus evidently moving with it. The presence of this mobility is very important in the diagnosis of *cancer of the uterus*. When this disease is present, the mobility alluded to is ordinarily lost, or at all events diminished, at a comparatively early period; the cervix is not readily moved in one or

the other direction. There may be loss of mobility of the uterus, also, in cases of *ovarian tumour*, and, indeed, in all cases where *tumours of considerable size occupy the pelvis*, e.g. fibrous tumours of the uterus, peri-uterine hæmatocele, &c.; but these cases are readily distinguished from cancer of the uterus, by paying attention to the following criteria. The loss of mobility in cases of uterine cancer is due chiefly to the thickening, induration, and deposition of morbid products in the cellular tissue, situated at the junction of the cervix and the vagina. There is often considerable puckering and contraction of the vagina at its junction with the cervix in cases of cancer, and by the extension of the disease, the uterus becomes, in advanced cases, fixed, and the vagina with it. Loss of mobility is a sign which, though quite valueless taken by itself, is of essential importance when observed in association with other signs, as diagnostic of cancer, as will be elsewhere fully explained.

ENLARGEMENT OF THE UTERUS.

The diagnosis of an enlargement of the uterus, to whatever cause due, from other tumours in the pelvic cavity, has been already considered (see p. 203). We have now to deal with cases in which the uterus is clearly the organ which is enlarged, to indicate the various causes of such enlargement and the means by which cases of this kind are to be discriminated one from the other.

In determining the nature of an enlargement of the uterus, the results of the vaginal examination require to be checked by, and compared with, the results obtainable by an examination of the abdomen. The differential diagnosis of the causes of the enlargement of the uterus, will be also, and more fully, considered under the head, 'Examination of the Abdomen.' In this place will be pointed out the means of arriving at a diagnosis which the vaginal examination affords.

PREGNANCY.—The recognition of the presence of enlargement of the uterus, is of the utmost importance as a sign, and one of the most reliable; of the existence of pregnancy. We find that the difficulties which practically present themselves in connection with this subject are of two kinds. In some cases of pregnancy, it is not easy to establish the presence of a uterine tumour by a vaginal examination, when such undoubtedly exists; in others, a uterine tumour being present, the difficulty is to associate it with pregnancy.

In normal pregnancy, the increase in the size of the uterus is

not at first considerable, nor easily appreciated. The organ remains in the pelvis for about the first three months, and it is only towards the end of that time that, by a digital examination from the vagina, this increase in size can be substantiated. It may be easy to follow the growth of the uterus in a given case, when examinations are made from time to time, and opportunity for comparison is thus afforded, but it is not so easy to pronounce upon the actual state of matters on the results afforded by a single examination. The increase in the size of the uterus, such as is due to pregnancy at a later period, is however more obvious, and it is then possible, also, to correct the results of a vaginal examination, by the information derived from an abdominal examination.

Evidence of the enlargement of the uterus due to pregnancy is to be sought in the space between the cervix uteri and the pubes, i.e. through the roof of the vagina. At the middle of pregnancy—during the fifth month—a rounded, smooth, tense, resistant tumour is here encountered by the finger, and this tumour shades off insensibly into the cervix uteri, there being no separation between them. It has been already remarked that there is sometimes a difficulty in recognising this tumour when it is present; Gooch expressed the opinion that ‘the young practitioner finds more difficulty in satisfying himself about this symptom than about any other which is detected by touch;’ and the statement is undoubtedly true. The difficulty sometimes arises, apparently, from the fact that the bladder, somewhat distended with urine, intervenes; at other times, from the tense elastic condition of the walls of the vagina and adjacent structures, interfering with the recognition of the tumour. If the supposed pregnancy have gone so far as the fifth month, the difficulty is almost always capable of removal by placing the other hand above the pubis—by, in fact, employing conjointly the abdominal and the vaginal examination. Before the fourth month, however, the difficulty of detecting the enlargement is greater, and there is less possibility of correcting an error by having recourse to another method of examination.

During the early months of pregnancy the uterine tumour is harder, firmer, and more resistant than it is subsequently, and the enlargement is not so easily got at, so to speak, from the vagina, owing to the interposed, and at first not materially altered, vaginal portion of the cervix uteri.

From chronic enlargement of the uterus, early pregnancy is distinguished by the fact that in pregnancy the menses are (usually) absent, that the os is soft, whereas in chronic enlarge-

ment or hypertrophy of the uterus, the lips of the os are unchanged in this respect; further, by the progress of the case, in the one the enlargement remaining pretty much in statu quo, in the other the enlargement constantly progressing. To this statement exception is to be made in those rare cases when the foetus dies, and remains in the uterus for some considerable time afterwards. The diagnosis of enlargement of the uterus due to fibroid tumour or polypus uteri from early pregnancy, rests on nearly the same grounds; moreover, these fibrous growths generally give rise to hæmorrhage, or to more or less profuse menstruation. But a case may come before us in which it is a question whether a particular hæmorrhage be due to abortion, to fibrous tumour, or to polypus of the uterus, and the examination is to be the means of deciding the point. The state of the uterus may be identical in the three supposed cases—it is enlarged and fuller than usual. The difference which exists is in the state of the os uteri: in abortion it is large, soft, and open, whereas in fibroid tumour occasioning hæmorrhage, the aperture is smaller, and the os is not soft as is the case in pregnancy. In polypus uteri the os may be open as in abortion, but the softness of pregnancy is not present. All these statements must be received subject to certain qualifications, elsewhere to be mentioned, in reference to the condition of the os during the early months of pregnancy. Cancer confined to the body of the uterus alone, which is a rare disease, could not well be mistaken for early pregnancy; the discharge, hæmorrhages, pain, &c., would put pregnancy out of the question.

The possibility of one of the conditions alluded to coexisting *with* early pregnancy must not be forgotten. In such cases much more difficulty would be encountered in making a complete diagnosis.

In cases of extra-uterine pregnancy, the uterus is enlarged and undergoes the same kind of changes, though not to the same degree, as in normal pregnancy.

After the fourth month of pregnancy the enlarged uterus is to be felt more distinctly between the cervix and the os pubis. The tumour which it here forms is tolerably firm, unless under exceptional circumstances, and it is reached with a variable degree of ease. It gives an obscure sense of fluctuation, and 'ballottement' is perceivable. This, as one of the most reliable of the signs of pregnancy, requires particular attention in this place. The position of the patient which is most favourable for the purpose of ascertaining the existence of ballottement, is the erect posture.

The rectum and bladder having been thoroughly evacuated, the finger is pressed upwards, resolutely but slowly, against the uterine tumour, and it is then very suddenly made to retreat for the space of half an inch or so, and there retained. The following instant the point of the finger is conscious of a slight tap, and this is produced by the foetus, at first pushed upwards, falling suddenly by the force of gravity on the lower part of the uterine cavity, at the point with which the finger is in contact. The sensation communicated is very peculiar and characteristic.

There is another kind of ballottement which is performed through the abdominal walls, and which will be described further on.

In forming a conclusion from the presence of ballottement, we must bear in mind, that in very rare instances, by depending too exclusively upon it, we may be led into error. Thus cases are related by Depaul and Cazeaux in which the fundus of the uterus, enlarged and tilted forwards, was felt through the walls of the bladder, and communicated a sensation like that of a foetus within the uterus. The presence of a stone in the bladder might equally give rise to the sensation.

On the other hand, we cannot affirm in cases where ballottement is not perceptible, that the patient is not pregnant. 'We must be prepared,' says Dr. Montgomery, 'for occasional disappointment in this test, as in others; inasmuch as the most carefully conducted examinations of this kind have failed of success when there was really a foetus in the womb of sufficient bulk to be thus felt. . . . This difficulty may arise in some cases from the foetus being unusually small, or from the cervix being unusually long; and in some instances I have been satisfied it arose from the uterus lying too much beyond the reach of the finger at the time of examination, the success of which may also be defeated by the presence of the placenta low in the cervix, or over the os uteri, and of course interposed between the finger and the child, which we are thus prevented from feeling.'*

It may not be possible in all cases to obtain the evidence which ballottement affords, even when pregnancy exists, and when it is sought at the most appropriate period: a want of dexterity on the part of the observer may, of course, render the test useless. There are some circumstances which render ballottement impossible, or at least more difficult than usual to obtain. One of these—the

* *Op. cit.* p. 200.

implantation of the placenta at the cervix uteri or over the adjacent anterior part of the uterus, has been mentioned. Another is, absence, more or less complete, of fluid in the amniotic bag, for the presence of fluid is essential to the development of the sign in question: another circumstance is mal-position of the fœtus. Ballottement enables us to distinguish pregnancy from that distension of the uterus which is present in cases of hydatidiform degeneration of the ovum; also from collections of serous or of sanguineous fluid in the uterus. In either of the cases in question the uterus may be enlarged and distended so as to simulate pregnancy, the vaginal portion of the cervix may be reduced in length as in advanced pregnancy, the menses absent, and the increase in the size of the abdomen may also favour the same idea. The existence of pregnancy, indicated by ballottement, would of necessity be corroborated by the presence of other local and general signs of this condition. The softness of the os, the shortening of the vaginal portion of the cervix, the more posterior position of the cervix, the presence of an abdominal tumour, changes in the breasts, &c. &c. Respecting the period of pregnancy at which ballottement is perceivable, there is a variation. It is best perceived between the fifth and seventh months: as Gooch remarks, 'earlier the fœtus is too light to be felt, and later it is often too closely packed.' It is, however, from the fifth to the seventh months that this sign of pregnancy is most useful; at a later period, other signs are available. It may, in favourable cases, be felt as early as the fourth month.

The diagnosis of pregnancy thus far advanced, from fibrous tumours or fibrous polypi enlarging the uterus, rests on the greater hardness and firmness of the tumour in the latter, the absence of softness at the os uteri, the slow growth and long-continued presence of the tumour, the presence of hæmorrhages or still-continuing menstruation. In cases of large polypus of the uterus distending the cavity, there are especially remarked the occurrence of hæmorrhages, copious discharge, and general and local disturbance. In most cases the os would be open to a certain degree, and although it might be somewhat soft, the hard tumour projecting from within would be at once recognised as a polypus. The os is not, however, always open in this manner in cases of polypus.

Although fibrous tumours of the uterus, equally with polypus growing within the cavity, usually prevent the occurrence of preg-

nancy, or at least cut it short at an early period, the coexistence of pregnancy with either of these conditions is now and then observed; these complicated cases present, as might be expected, peculiar symptoms, and require careful examination and attention for their recognition.

Mole Pregnancy.—The most important of the conditions comprehended under the above title is that known as the hydatidiform. Here the embryo perishes at an early period of its development; the substance remaining in the uterus continues to grow, and a peculiar product results, the anatomical characters of which have been already described (see p. 74). The symptoms are at first those of pregnancy, but no movements of the fœtus are felt at the proper time for their appearance; the breasts do not pass through the regular series of changes, and yet the uterus continues to enlarge. The enlargement progresses more, often very much more, quickly than is the case in normal pregnancy. On examining from the vagina the uterus is found enlarged as in pregnancy, and the alterations met with in the vaginal portion may be pretty nearly identical with those peculiar to this condition, but the uterus is harder than is the case in normal pregnancy. It is, as before remarked, larger than it should be, considering the time the catamenia have disappeared. If the condition in question have existed for some months, we are generally informed that hæmorrhages have been occasionally observed, that there has been an occasional discharge of a watery fluid from the vagina. It is not possible to detect ballottement as in regular pregnancy. The os uteri may or may not be open sufficiently to allow the observer to detect the presence of some of the hydatidiform cysts in the cavity. The physical condition of the uterus, however, as ascertained by vaginal examination, may be such that it is impossible to distinguish it from normal pregnancy; even the fact that ballottement is absent does not positively assure us that there is not a living fœtus within the uterus, as already remarked; and the diagnosis must then be guided by the result of abdominal examination, by a consideration of the rational symptoms, and by the history of the case. (See ‘Examination of Abdomen.’)

The hydatidiform or vesicular mole is not the only one which may be present, but it is the only one which is associated with considerable enlargement of the uterus.

True hydatids of the uterus are extremely rare. ‘Rokitansky’s often-quoted case’ says Dr. Farre, ‘appears to be the only certain

instance of acephalocysts in the uterine cavity which pathologists in the present day are able to adduce.*

Missed Labour.—Under this term have been classed certain very rare and extraordinary cases in which, pregnancy having advanced nearly to its completion, the fœtus has perished, and has been retained in the uterus for a variable time. In such a case the symptoms would be necessarily very unusual and peculiar; first, apparently, normal pregnancy, absence of delivery; then, cessation of all signs of pregnancy, the abdominal and uterine enlargement still continuing.

Enlargement due to Sanguineous Distension of Uterus (Hæmatometra).—Cases in which the uterus is largely distended with blood come before us very rarely. In most of the cases of this kind, the distension is due to retention of the menstrual fluid, which is unable to escape owing to some abnormal condition of the canal of outlet. Where menstruation has never occurred, this retention is mostly due to imperforate condition of the hymen. These latter cases have already been considered (p. 181). More rarely, the canal of the vagina being found patent, the retention is due to congenital closure of the os uteri, also in patients who have never menstruated. The patient would in this case present the following combination of symptoms:—Vaginal canal patent, os uteri closed, uterus enlarged, menstruation never present. In patients who have formerly menstruated, retention of menstrual fluid, and consequent enlargement of the uterus, may be due to one of the following causes:—*occlusion of the os uteri*, in consequence of the use of caustics, or in consequence of *adhesion following on parturition*; diseases of the uterus, e.g. *polypus uteri*, *hypertrophy of the cervix uteri*, *cancer* of the inferior part of the uterus, possibly also, pressure of *tumours external to the uterus*. These have in rare cases led to retention of menstrual fluid, by blocking up the outlet.

A sign common to the conditions just described, is absence of the catamenia—and care will be consequently necessary to distinguish such cases from pregnancy.

The diagnosis of that form of enlargement of the uterus due to menstrual retention from other conditions capable of giving rise to enlargement of this organ, turns partly on the history of the case, partly on the results of examination. The remarkable symptoms produced by retention of the catamenial fluid have been

* *Loc. cit.* p. 698.

elsewhere described. With reference to the physical characters of the tumour in the cases now before us, it is elastic, rounded, giving evidence of fluctuation, and, if large, this fluctuation can be made evident by simultaneous abdominal and vaginal examination.

Lastly, in reference to retention of the menstrual fluid, although it cannot be doubted that retention to such a degree as to produce great enlargement of the uterus is rare, excepting in cases when menstruation has not occurred at all, there are good reasons for believing that partial retentions with less considerable distension of the uterus are by no means so uncommon as has been supposed. (See p. 119.)

Under the term *Hydrometra*,—*dropsy of the uterus*, are included certain rare cases in which a serous fluid collects in the uterus, and is there retained, owing to the existence of an impediment to its exit. The physical signs of enlargement of the uterus from this cause resemble closely those present in menstrual retention; the tumour is elastic, tense, and spherical. But the history is very different. The hydrometra is usually present in women beyond the climacteric age; the enlargement is of slow growth, giving rise to few symptoms. There are however occasional severe labour-like pains, which are due to contractions of the uterus. It would be hardly possible to confound this condition with pregnancy.

Purulent Collections in the Uterus.—The uterus may be distended with pus or with a puriform secretion, which may be considerable in amount. These purulent collections are by no means common. The puerperal state furnishes the majority of the cases coming under this category. (See ‘Non-sanguineous Discharges from the Generative Organs.’)

Physometra.—Here the uterus is enlarged from the presence of gas within its cavity. This disease is very rare, but the enlargement due to it may be very considerable. In hydrometra, as in physometra, the uterine orifice is generally closed, partially or completely. The circumstances under which this tendency to the formation of gas in the uterine cavity exists will be referred to under the head ‘Examination of the Abdomen;’ where also the diagnosis will be pointed out.

Tubercle of the uterus is a very rare disease. Attacking the mucous membrane in the first place, the cavity of the uterus may at a later period become ‘filled by a purulent pulpy fluid’ (Farre), and thus the uterus becomes enlarged. The enlargement may be considerable, such fluid distension of the cavity being absent.

In cases of enlargement of the uterus due to any of the causes

considered up to the present point, the tumour is to the touch more or less soft or elastic, or conveying an impression that there is fluid within. The next class of cases are those in which the enlarged uterus is hard and firm and resistant. The conditions which may under such circumstances be present, and between which we have to distinguish, are the following :—

Fibrous tumour of the uterus.

Fibrous polypus within the uterus.

Cancer of the body of the uterus.

Chronic enlargement or hypertrophy of the uterus.

It is to be observed of these different conditions that, with the exception of cancer of the uterus, they are all more or less chronic in character. Each of them may be attended with more or less profuse losses of blood, especially the three former. The prominent characteristic and diagnostic symptoms of each will be now described, but the subject will again engage attention under the head ‘Examination of the Abdomen.’

Fibrous Tumours and Fibrous Polypi of the Uterus.—Whether the tumour be in the wall of the uterus or in its cavity, the uterus is equally hard and resistant externally. In the case of a polypus, the position of the uterus is more symmetrical, whereas a large fibrous tumour growing in the walls gives rise to distortion of the organ. The os uteri may be alike in the two cases—it may be open or closed: in the case of polypus, however, it is more generally open, so as to admit the point of the finger, and frequently a portion of the surface of the polypus can be felt within the os, even if it be not found projecting into the vaginal canal. In some cases it is impossible to ascertain whether the case be one of fibrous tumour or fibrous polypus, until after dilating the os uteri artificially. The hæmorrhages and discharges are generally profuse in cases of polypus, whereas these symptoms may be absent in the case of fibrous tumours. When the enlargement due to polypus or fibroid of the uterus is not very considerable, the diagnosis of the case from simple chronic hypertrophy of the uterus, or from cancer of the uterine fundus may be, the physical signs alone being considered, by no means easy; but the symptoms observed in these different cases are not identical. In fibroid tumour and in chronic hypertrophy, the case is one of slow progress—the symptoms are not necessarily so important; but in polypus and in cancer of the uterus there are generally, leucorrhœa, profuse menstruation, hæmorrhages, &c. Further observations on enlargement of the uterus from these causes will be found in the chapters on abdominal tumours. The

diagnosis of an intra-uterine polypus, when the tumour is not of considerable size, is often, however, a matter of great difficulty, unless the plan first followed by Dr. Simpson, of dilating the os uteri, be had recourse to.

Cancer of the Fundus Uteri.—The diagnosis of this rare condition has been incidentally referred to in more than one place. The diagnosis of cancer in this position, from polypus, chiefly turns on the rate of progress of the case, unless recourse be had to artificial dilatation of the os for the purpose of exploring the interior of the uterus, and thus obtaining further information. (See also ‘Examination of the Abdomen.’) The more ordinary cases of cancer of the uterus, where the affection is seated in the cervix, will be described in the next chapter. The body of the uterus may become affected secondarily, and so enlarged, but the condition of the os uteri in such cases offers decisive diagnostic data.

Chronic Enlargement or Hypertrophy of the Uterus.—An enlargement of the uterus due to this cause is limited in degree; for although the uterus may assume a very large size, when a tumour is growing within its walls, pure and simple hypertrophy never gives rise to such considerable enlargement. Hypertrophy of the uterus is an affection which is of a peculiar character; the uterus is thickened, increased in size, increased in vascularity; and it gives rise often to great discomfort from the pain, dragging sensations, feeling of weight, and from the effects of the mechanical pressure on the neighbouring organs. It is usually associated with enlargement and hypertrophy of the vaginal portion of the cervix uteri; and, indeed, the condition of the cervix is the one which more usually attracts attention, to the exclusion of the other morbid condition, viz. the enlargement and hypertrophy of the fundus or body of the uterus.

A peculiar form of enlargement of the uterus is that constituted by defective involution of the organ after delivery: here the uterus does not return with normal rapidity to its proper size, but remains congested, large, and unwieldy. (See ‘Examination by means of the Sound.’)

Chronic ‘congestion’ or chronic inflammation of the uterus is attended with slight increase in size of the organ. The increase in size is appreciable to the touch. There may be, conjoined with enlargement of this kind, an excessively sensitive condition of the uterus—the neuralgic or ‘irritable uterus’ of Gooch. Further remarks on this subject will be found in subsequent chapters.

CHAPTER V.

DIGITAL EXAMINATION OF THE OS UTERI, AND OF THE VAGINAL PART OF THE CERVIX UTERI.

Normal Condition of the Os and Vaginal Part of the Cervix Uteri before and after Pregnancy has occurred—Apparent absence of the Os Uteri; due to absence of Uterus, Occlusion of the Os Uteri, Elevation of the Os in Pregnancy, Obliteration of the Vagina, certain Abnormalities of the Hymen, Retroversion of the Uterus—Unusual Softness of the Os Uteri from Pregnancy or other Causes: Diagnosis of these Conditions—Unusual Hardness of the Lips of the Os Uteri; its Causes—Enlargement of the Os Uteri; Causes of this Condition—Diminution in the length of the Vaginal Portion of the Cervix Uteri; Relation of Pregnancy to this Condition—Enlargement of the Os and Vaginal Portion associated with a Fissured, Irregular, Indurated Condition; due to Child-bearing, Hypertrophy of Uterus, Chronic Inflammation, Fibroid Tumour, Cancer in its early Stage, or Tubercle—Irregular Enlargement, Induration, Destruction and Loss of Substance, all more or less combined; due to Cancer of the Uterus in the Ulcerative Stage—General Symptoms present; Corroding Ulcer—Unusual Sensibility of the Os Uteri; its Causes.

TUMOURS PROJECTING INTO THE VAGINA FROM THE POSITION OF THE CERVIX UTERI. Various Conditions associated under the Term 'Prolapsus Uteri,' viz. Hypertrophy of the Cervix Uteri, supra- and infra-Vaginal; true Prolapsus of the Uterus—Inversion of the Uterus, complete and partial: Diagnosis of Inversion from Polypus—Polypi of the Uterus: various Forms, Fibrous, Malignant, Recurrent—Smaller Polypi—Products of Conception, Coagula, &c.

TUMOURS GROWING FROM THE OS UTERI.—Cauliflower Excrescence—Medullary Tumour—Cystic Enlargement of Cervix.

MUCH importance is very justly attached in a diagnostic point of view to the condition of the os uteri. The size of the orifice, its shape, the hardness or softness of the lips of the os and of the adjacent structures of the vaginal portion of the uterus, are all open to considerable variation, and upon these variations conclusions may be very safely based as to the nature of the pathological or physiological alterations present. The subject of the pathology of the os and cervix uteri, so necessary to be understood in order to estimate aright the value of the signs derivable from digital examination of this part of the organ, will be found discussed under the head 'Examination by the Speculum.' The observations in question should be consulted before undertaking an examination, either digitally or with the aid of the speculum.

To appreciate the various changes which are liable to occur in the condition of the lower part of the uterus—that part of it which is most accessible to digital examination—a knowledge of the normal condition and relations of the parts is essential. The finger must be educated and accustomed to associate a particular sensation with a corresponding condition: an observer with an educated finger will be thus enabled to draw conclusions wholly unattainable by an inexperienced person. In the words of Gooch, ‘the finger soon gains the power of feeling when the mind has ‘acquired the knowledge of what to feel for.’

As preliminary to the discussion of this subject, some account of the normal condition of the os and cervix uteri is necessary.

‘In the virgin and unimpregnated condition of the uterus,’ says Dr. Montgomery, ‘its mouth and the lower section of its neck, ‘when examined by the finger introduced into the vagina, can be ‘felt, as it were, projecting into that cavity from a quarter to half ‘an inch. The part so projecting feels remarkably firm, is slightly ‘tapering or conical in form, and about as large as the end of a ‘man’s thumb; having, in its termination in the vagina, a transverse ‘opening, whose lips or margins feel firm and well defined. This ‘may be so far open as to allow the extremity of the finger to be ‘insinuated to the depth of an eighth or a quarter of an inch, ‘sometimes a little more, sometimes not so much; or it may merely ‘communicate a sensation of a slight depression almost without a ‘cavity, such as is felt when the tip of the finger is pressed between ‘the lateral cartilages, at the extremity of the nose. Sometimes ‘the os uteri differs very considerably from this description, being ‘almost imperceptible from its diminutive size, and perfectly ‘circular, and it is not very rare to find it opening at once from ‘the upper extremity of the vagina without any projection of the ‘cervix uteri into that canal, which to the finger seems to taper ‘gradually to a point, and there terminate in the orifice of the ‘womb, the margins of which are very indistinctly felt. . . . Once ‘a woman has borne children, or sometimes even one child, the ‘conditions of the uterus are liable to be altered in several appreciable circumstances. The whole organ is apt to remain permanently larger than it was originally, and the cervix partaking of ‘this change, is found broader, less prominent, and less firm in ‘texture, while its shape is sometimes the reverse of that noticed ‘in the virgin or nullipare, being indeed somewhat conical, but ‘having the base of the cone downward instead of above; under ‘the same circumstances the os is found of greater dimensions, and

‘its opening much more distinctly transverse, admitting more readily the introduction of the end of the finger, and not unfrequently having its circumference or margins uneven, perhaps fissured, and giving the sensation of being a little lobulated.’*

With reference to the shape of the opening, in the virgin, it would be more correct to say that it is round; the transverse shape is assumed when the uterus is enlarged, or after child-bearing. The changes produced by pregnancy will be presently described more particularly. The above remarks apply only to the uterus in the non-gravid condition.

APPARENT ABSENCE OF THE OS UTERI.

The first class of cases to be considered are those in which no cervix or os uteri can be detected by digital examination. In a woman who has never had children and who has never menstruated it may be that this arises from the fact that the uterus is *altogether wanting*. The other signs indicative of this condition have been mentioned at p. 184. In order to ascertain whether the uterus be really absent, it is necessary to perform a simultaneous examination by the rectum and by the bladder, as previously described more particularly (*loc. cit.*).

Cases of complete absence of the uterus are exceedingly rare. When the woman has had children, or when there has been a menstrual discharge, the case cannot be one of absence of the uterus. The vaginal part of the cervix, as already remarked, is generally shortened in women who have had children; in some cases it almost entirely disappears. It occasionally happens that in such cases *the os uteri becomes occluded*, and no opening can be found. Cases have been recorded of women who were pregnant, and in whom this occlusion had occurred apparently soon after conception, and artificial delivery, by an incision in the lower part of the uterus or otherwise, has been rendered necessary. It may be, then, that the os uteri is not to be felt because it has become occluded in the above manner; but the signs of pregnancy would under such circumstances be observed: or it may be that the *os is situated unusually high*, and is not readily reached, as is the case more or less in the last month or two of *pregnancy*: there the presence of pregnancy should suggest the explanation. Or the *vagina may have become narrowed and constricted* by inflammatory adhesions (after a difficult labour), and the vagina may appear

to terminate lower down than is really the case. *Abnormities of the hymen* may lead to a like erroneous inference (see p. 180).

In *retroversion of the gravid uterus* the os uteri and the cervix uteri are often dragged up so high behind the pubic symphysis that no os can be felt. The same result may occur when *large tumours*, fibroid, ovarian, &c., occupy the pelvis. In cases of pregnancy, tumour, &c., dragging the os out of its place and so preventing its being felt by the finger, the pelvic tumour is so large that the explanation of the apparent absence of the os would be obvious.

In the next place it is proposed to consider the physical conditions of the os and cervix, and their variations, *seriatim*, excluding for the present that class of cases in which the cervix is considerably increased in size.

UNUSUAL SOFTNESS OF THE LIPS OF THE OS UTERI.

The physical conditions of the os uteri described as 'hardness' or 'softness' are perhaps the most important to which attention can be directed. Normally, the textures of the os, under which term we may conveniently include the parts surrounding the aperture, are, in the virgin, firm and resistant, and a peculiar impression is conveyed to the finger hardly to be described in words. This is to be considered as its typical physical condition, and it is necessary to be familiar with it in order to be able to detect the variations from the healthy state.

Pregnancy.—Unusual softness of the os uteri and of its vaginal part is one of the signs of pregnancy, and, as such, deserves special and particular mention in this place. It is a peculiar kind of softness, giving the sensation of a soft texture overlying a harder one, and imparting a cushiony elastic feel, quite characteristic. Montgomery agrees with Forget in comparing it to the sensation given to the finger when pressed into the glans penis in a state of erection. The surface of the lips of the os are at the same time, in primiparæ, smooth and uniform; in multiparæ there may be fissures giving the lips a slightly lobulated arrangement. As regards the period of pregnancy at which this peculiar softness is observed, it is present during the second month pretty distinctly, but not so distinctly at this early period in primiparæ as in women who have already borne children. At the end of the third or the fourth month, however, the softness of the os uteri is very distinctly present in most cases; and, what is very important, the softness becomes associated at about the fifth month, and

subsequently with a peculiar shotty feel, arising from the muciparous glands around the os uteri becoming enlarged. Moreover, the softness becomes intensified as pregnancy advances: in many cases I have found the lips in an almost spongy condition, from extreme softness, near the end of pregnancy. The existence of this softness, and of the other physical changes, in the vaginal portion, forms a very strong presumption in favour of the presence of pregnancy. The softness alone, or a condition which at all events closely simulates it, is observed under other circumstances than pregnancy. The menstrual nixus is attended with a certain degree of softness of the part; but this could hardly mislead the observer if care were taken to make a second examination after the interval of a fortnight from the date of the first. Distension of the uterus, owing to the presence of fluid, a large polypus, hydatidiform degeneration of the ovum, may, each or either of them, give rise also to softening and fulness of the os in some degree simulating that due to pregnancy. In cancer of the cervix uteri there may be softness due to the presence of fungous growths, having a soft consistence, but in this case there is also *irregularity* of the surface.

When the uterus is inflamed and congested, the os and vaginal portion may become swollen and puffy; and it has been stated that in cases of masturbation an œdematous condition of the same parts has been observed. These sources of fallacy would have to be guarded against in drawing any positive conclusion as to the presence of pregnancy.

As Montgomery observes, this softness of the os is most reliable from a negative point of view; thus, if the patient were supposed to be five months advanced in pregnancy, the absence of the softening would be strongly against such a supposition. This statement does not hold good in cases of cancer of the cervix uteri; in such cases there might be an absence of softness, and the patient might yet be pregnant. In ordinary cases, however, the presence or absence of this softening of the os and vaginal portion is extremely valuable from a diagnostic point of view.

Softness of the os is observed in cases of cauliflower excrescence of the os uteri. The softness due to this cause is, however, associated with a lobular enlarged condition of the lips and margins of the os uteri, eminently characteristic of the affection. In the very early stage of this affection, however, when the lips of the os are not much enlarged, this softness might, by a beginner, be possibly mistaken for that due to pregnancy.

UNUSUAL HARDNESS OF THE LIPS OF THE OS UTERI

cannot be said to be diagnostic *per se* of any particular disease of the uterus. Normally, the degree of hardness presented to the touch is considerable, and if the shape and size of the os and of the vaginal portion be not altered, the hardness alone is not significant. It would, however, enable us to decide against the presence of pregnancy in a case supposed on other grounds to have gone as far as the fourth or fifth month. Conjoined with *other* physical changes in the vaginal portion presently to be alluded to, it may become positively significative of other important conditions.

The os uteri is occasionally found to convey to the touch an impression as if hard rounded masses like shot, of variable size, were imbedded in it. It appears probable that these bodies are generally the follicular glands of the part distended with accumulated secretion. It has been already mentioned that during pregnancy rounded bodies are usually found to be present in the substance of the os, and there seems to be an identity between the bodies in question and those occasionally met with in this position under other circumstances, which may attain a larger size, and which have been termed by several writers *Ovula Nabothi*.* And in cases, to be more particularly referred to subsequently, where small cysts are found growing from the os, it appears probable that these cysts have a like origin.

ENLARGEMENT OF THE ORIFICE—THE ‘OS UTERI.’

In the virgin, the uterus being healthy, the aperture is large enough to be just perceived by the touch. In the pregnant uterus the orifice enlarges, and at the fifth month is nearly large enough to admit the point of the finger. In the latter case, this enlargement of the orifice is associated with softening of the lips of the os, with the presence of the muciparous glands, uterine tumour, &c. When the orifice is so large as to admit the finger, softness being absent, this increase in size may be dependent on one of the several following conditions:—In cases of large fibrous tumour of the uterus encroaching on the cavity, the lips are separated to a considerable extent, but they are hard and firm. Such is also more usually the case where polypus of the uterus of large size is present. The separation of the lips occurs earlier in polypus than in cases of fibrous tumour.

* Some remarks on the nature of these bodies will be found in Dr. Tyler Smith's work *On Leucorrhœa*, p. 143.

The os is also widely open in cases of enlargement of the uterus, due to deficient involution of the organ after delivery. In women who have been recently delivered an open condition of the os is necessarily present, and this condition of the os is a very valuable sign in cases where evidence of recent delivery is required for medico-legal purposes. Under such circumstances, also, the condition of the os uteri is in other respects peculiar. It is soft, flabby, and relaxed. The open condition of the os gradually diminishes after labour, so that after two or three weeks the sign is no longer useful: in cases where abortion has occurred, the open state of the os after delivery is less marked, and it is a less decisive test than when delivery has taken place at full term.* The subsequent *progressive closure* of the os is a valuable diagnostic sign in these cases. (See also 'Examination by the Sound.')

An open condition of the os is found, often to a marked extent, in cases where the uterus is enlarged from the presence of the condition frequently termed chronic inflammation or congestion. In cases of leucorrhœa connected with an increased action of the numerous glands of the cervix uteri, the os is open more widely than usual. In cases of cancer of the uterus, the aperture is often much larger than it should be, and the first stage of this disease has in this respect a great similarity to other conditions of less serious import. But in cases of cancer of the os uteri, the opening has lost its symmetrical shape; there is, moreover, irregularity, of a kind to be particularly described presently.

On the other hand, the *opening of the os may be too small*, or altogether wanting. If there be any reason to suspect that either of these conditions be present, as in cases of sterility, dysmenorrhœa, &c. &c., it will be necessary to resort to another method of examination, and to use the uterine sound as a probe. (See 'Examination by Sound.')

DIMINUTION IN THE LENGTH OF THE VAGINAL PORTION.

Variations in respect to the length of the vaginal portion of the cervix are important from a diagnostic point of view. In *pregnancy* there is a diminution in the length of the vaginal portion, the nature and degree of which must be now explained. In the first place, it is a mistake to suppose that there is always a perfect regularity in the degree to which the abbreviation of the vaginal portion proceeds at

* A most valuable chapter *On the Signs of Delivery*, will be found in Montgomery's work, *jam cit.* p. 573.

the same period of pregnancy in all instances; in the second place, it must be recollected that comparative, not positive, measurements are only to be relied on. In order that we may draw correct conclusions in particular cases, it is necessary to be aware of the normal length of the vaginal portion in the case before us, for after repeated pregnancies, as already stated, the portion of the cervix projecting into the vagina becomes shorter and shorter. Normally, the vaginal portion begins to be reduced in length about the fourth month of pregnancy, and as pregnancy advances the shortening also progresses, until at full term the whole, or very nearly the whole, of the vaginal portion has been drawn up out of the vagina. Dr. Matthews Duncan has shown that the length of the cervix itself is very little altered during pregnancy: the apparent shortening must therefore be due to drawing up of the cervix out of the vagina, which process has the effect of reducing the length of the vaginal portion. My own observation enables me to confirm Dr. Duncan's views on the subject.

This shortening becomes useful as diagnostic of pregnancy when the patient is under observation for some months, and it can be ascertained from time to time that a *progressive* shortening is actually taking place. If the other signs present be not against pregnancy, this is one of the strongest proofs in its favour. Enlargement of the uterus and softening of the os uteri would under such circumstances be associated with it. It is the progressive shortening, not the actual amount of the same, which is important. The vaginal portion may be found *actually* shortened from several other causes—previous pregnancies, dislocation of uterus upwards by ovarian tumours, distension of uterus by large polypus or by fluid, as in cases of hydrometra, also from dragging of the uterus upwards by large fibrous tumours of the uterus. In cases of extra-uterine pregnancy, the shortening is wanting. (Kiwisch.)

ENLARGEMENT OF THE OS UTERI AND VAGINAL PORTION OF THE
CERVIX, ASSOCIATED WITH A FISSURED, IRREGULAR, INDURATED
CONDITION OF THE PART.

It must be premised that the cases to be considered under this head do not include those in which there is any *considerable* increase in size of the vaginal portion; these latter will be more properly considered under the head of tumours of the vaginal portion.

We here enter on a question of exceeding practical interest and importance, viz. the diagnosis of cancer of the uterus, in its early stage, from certain other conditions which may produce somewhat analogous physical alterations in the os and cervix uteri, and which may give rise also to symptoms more or less resembling those witnessed in the early stages of this justly dreaded disease. A fissured, irregular, indurated and enlarged condition of the vaginal portion of the uterus and of the lips of the os may proceed from a variety of causes. In *women who have had children*, the os uteri is generally more or less fissured, giving the portio vaginalis a sort of lobulated feel; the number of fissures and lobes varies from three to four, five or six; and in women who have had severe labours, rendering the use of instruments necessary, the os may be found very deeply fissured, the parts having been torn during labour. If the uterus be healthy, however, there is no marked enlargement of the part—on the contrary, there is a tendency to a diminution in its size, the diminution being more marked as the patient becomes older. The fissured condition of the os uteri is then quite compatible with the presence of health. When, however, in addition to this, the lips of the os uteri are indurated and larger than usual, the whole vaginal portion participating in this condition, this combination is indicative of disease. It may be due to the comparatively harmless *hypertrophy of the uterus* (generally synonymous with defective involution of the organ after childbirth) to a *chronic inflammatory condition of the cervix*, to the presence of *fibrous tumours* in the walls of the uterus, to *carcinomatous deposit* in the substance of the portio vaginalis—the latter being the first in a series of changes which may result in the death of the patient at no distant period—to *tuberculous affection of the cervix uteri*, or to presence of *small fibrous tumours* in the portio vaginalis. The diagnosis between these several conditions is often one of great difficulty, and is only arrived at by an attentive consideration, not only of the physical signs themselves, but of the attendant phenomena, and of the present and past general condition of the patient. Further remarks on the physical condition of the os uteri in cases of ‘inflammation’ will be found in the next chapter.

Dr. Henry Bennet, whose searching analysis of the abnormal conditions of the os uteri in relation to the diagnosis of cancer cannot be too highly spoken of, and who first laid down exact rules for the diagnosis of cancer from a condition with which it was formerly very frequently confounded, viz. chronic inflammatory induration, has pointed out some of the diagnostic points in reference to the question now at issue in the following words:—

‘When the lobular, knotty, irregular condition of the cervix is the result of laceration, and is simply inflammatory, the fissures which separate the lobes radiate round the cavity of the os on a centre—which is not the case in a cancerous tumour—each separate lobe being perfectly smooth in itself, and free from tubercles or superficial inequalities.’*

The mere *size* of the lobules indicates nothing of malignant character, provided they be tolerably smooth; the depth of the fissures is of favourable import also when the lobules are smooth. Extreme hardness is often observed when no serious disease is present. Uniformity in the degree of the hardness of the lobules is favourable. Slight excoriation of the surface of the lobules is quite compatible with simple inflammation, or other innocuous conditions. A deeply *excavated* ulcer on some portion of the surface would excite apprehension as to the cancerous nature of the enlargement. When the lobulation and enlargement is limited to one side of the os, this may be due to growth of a non-malignant tumour in the substance of the cervix. The smoothness of the tumour, the absence of general signs of disease, absence of bloody and offensive discharges, would generally put all suspicion of cancer on one side.

Time is of great importance in the diagnosis of these cases. An induration and enlargement of the os uteri, which is known to have existed for some years, may be pronounced to be non-cancerous.

Negatively, the points now alluded to are of great diagnostic value. Thus, supposing the patient to be suffering from pain, offensive discharge, occasional hæmorrhages, &c., and suspecting herself to be the subject of cancer, a very simple examination might, by revealing an absence of all induration or enlargement of the os uteri, render it almost certain that the case was not one of cancer. The rare occurrence of cases in which the disease begins in the fundus uteri prevents this rule being quite absolute.

Unquestionably the most important, and perhaps the least fallacious guide to the diagnosis in a doubtful case, is the mobility or immobility of the uterus—a point which has been already alluded to; and when the uterus is found to be as movable as usual, when there is an absence of induration in the cellular tissue before and behind the cervix uteri, no considerable pain, no offensive discharge, no particular constitutional derangement, we

* *On Inflammation of the Uterus*, 4th ed. p. 90.

may safely conclude that the case is not one of cancer. The immobility due to pressure of tumours within the pelvis must not be confounded with the condition produced by cancerous disease of the uterus itself. Lastly, it must be recollected that mobility of the uterus is not necessarily and always lost, even in advanced cases of cancerous disease, although as a rule it is so lost.

With all the helps to diagnosis which have been mentioned, several cases will remain of which it may be for some time difficult to determine the true nature, and to say whether the diseased condition of the cervix be of malignant or of non-malignant character. The inequality of the induration present is generally an indication of malignant disease. Again, the fissures which separate the lobes of the os may be at an early period of the disease smooth at their edges, as in the non-malignant form; but they soon assume a sharply distinct shape. Hamorrhage from the generative organs is a symptom of cancer usually observed at an early period, but hæmorrhage may be entirely absent, the catamenial discharge only being slightly increased. The value of 'hamorrhage' as a symptom of cancer has been discussed at p. 60. Another symptom also early observed is pain in the uterine and lumbar regions—not merely discomfort, but actual pain. Weakness and general debility, may be observed also from the very commencement. The importance of time has been alluded to, and much aid will be derived from observation of the progress of the case in making a diagnosis. Thus, if a thickened, fissured, indurated, condition of the os uteri have existed in a particular case for a considerable time, say twelve months, and no particular disturbance of the general health be observed, it is highly probable that the affection is not malignant. It is not in the nature of cancer affecting the substance of the cervix uteri, and giving rise to physical changes, such as those described, unless under very exceptional circumstances, so long to delay its progress.

In the diagnosis of cancer at an early period, Dr. Montgomery laid particular stress on a shotty condition of the margins of the os, associated with turgidity, and with a crimson discoloration of the os tinæ generally; the former dependent, as he conceived, on cancerous affection of the Nabothian follicles, the starting-point of the affection: his views on this point are contradicted by Walshe, Tyler Smith, and Bennet; and it appears that these conditions may be found in patients whose cases are not cancerous at all. Dr. Bennet states that the condition described by Dr. Montgomery,

as the first stage of cancer, is really the result of simple inflammation. He believes that it is very rare to meet with cancer of the uterus in its first stage. In the first stage of cancer of the uterus, Dr. Bennet states that he would expect to find 'shot-like, 'pale, indolent indurations, all but insensible to pressure, strewn 'irregularly over the cervix, or an irregular hard tumour similarly 'characterised developed on its surface.' In a case related by Becquerel,* there was a small, hard, violet-coloured tumour, projecting from the surface of the cervix at a very early stage of the disease. It was unequal and nodulated. It is probable that all cases do not present like physical characters at an early stage, and it is not to be expected that they should, seeing that the disease does not always commence in the same part of the cervix.

The largely patent condition of the orifice usually present in cases of cancer is not peculiar to it, as already remarked.

The presence of a foetid discharge from the vagina is too often looked upon as indicative of cancer. Wherever there is hæmorrhage, there may be foetid discharge due to decomposition of clots of blood which have been detained. (See p. 87.)

There may be a healthy condition, or a comparatively healthy condition at least, of the os and cervix uteri, and still cancer of the uterus may be present, the disease being confined in some rare cases to the body or fundus uteri. In such cases, a digital vaginal examination might reveal little or nothing. If the patient present constitutional signs, like those of cancer, with occasional hæmorrhages, profuse and continuous foetid discharges, watery or purulent, while no alteration of the os and cervix is revealed by examination, cancer of the fundus uteri should be suspected. The upper part of the uterus is generally much enlarged in such cases, and may be felt so enlarged above the pubes. (See 'Examination of the Abdomen.')

In conclusion, it should be borne in mind that the condition of the os and cervix, to which the previous remarks apply, is one simply of induration, slight enlargement, and lobulation. Ulceration, marked loss of substance, associated with hardening, &c., is a condition to which the remarks in question are not at all applicable.

Irregularity, unevenness, &c., in different parts of the vaginal portion, may be due to presence of *small rounded tumours* imbedded in the tissue of the cervix. Such tumours, which are of

* *Traité Clin. des Maladies de l'Uterus.* Paris: tome i. p. 321.

fibrous character, might give rise to suspicion of cancer, from the fact that one side of the cervix would under such circumstances be hard or nodulated, and the other side soft and natural. These tumours are, however, very rare: they are of slow growth, give rise to little inconvenience, and never to grave symptoms, such as are observed in cancer.

Tuberculous enlargement of the vaginal portion is a condition of exceeding rarity. It is characterised by presence of tumours of uncertain size, of rounded form, at first firm, afterwards softer, yielding to the pressure of the fingers, and indistinctly fluctuating; always accompanied by considerable engorgement of the cervix uteri. It is a condition due to presence of masses of tubercle yet unsoftened, to tubercular infiltration, or to inflammatory action attendant on softening. Such is in substance the account given by Robert, and quoted by Dr. West.* Dr. West mentions in connection with this subject that he has occasionally seen small yellow deposits on the surface of the cervix the size of a split pea, or smaller, having the appearance of small deposits of yellow tubercle, and giving issue, on being pricked, to a small quantity of matter of the consistence of pus. These deposits, which have been alleged to be tuberculous, Dr. West looks upon as due to hypertrophy of the Nabothian follicles.

Practically, the importance of the question at issue is not considerable. The existence of tubercle of the cervix is denied by Rokitsansky; it is certain that tubercular infiltration of the cervix with tubercular softening &c. is very rare. I am inclined to believe, however, that in women of tubercular tendency, and in whom the cervix uteri is sometimes found enlarged, hypertrophied and indurated, this enlargement is of tubercular origin, though, anatomically speaking, there may be no deposit of tubercle. I have in private practice seen two cases which might be referred to this category. This is a point which is, however, more interesting in connection with the subject of treatment than that of pathology.

IRREGULAR ENLARGEMENT, INDURATION, DESTRUCTION AND LOSS OF SUBSTANCE OF THE VAGINAL PORTION AND OF THE LOWER PART OF THE UTERUS—ALL MORE OR LESS COMBINED.

The condition of parts characterised as above, is that present in the ulcerative stage of cancer of the uterus; and it is a condition which is so characteristic that it can hardly be mistaken for any-

* *Op. cit.* p. 362.

thing else. The degree to which the destruction of substance is found to have proceeded varies very much. The os uteri may be found to have lost its natural shape, or the vaginal portion has wholly disappeared, and the finger passes into an excavation with hard irregular walls, which are constituted by the remains of the vaginal portion, or by the carcinomatously-infiltrated cellular tissue at the upper part of the vagina. Above is felt a hard irregular mass, the somewhat enlarged uterus, fixed and immovable, and not easily definable from the surrounding hardened structures. 'When you feel,' says Dr. Simpson,* 'a rough irregular excavated or anfractuons ulcer seated on a hardened base, and surrounded by hardened tissue, cancer is present.' The process of ulceration may be found to have extended to the rectum, in which case feces and flatus pass from the vagina to the bladder, occasioning involuntary micturition, or to both; in the latter case the rectum and bladder open into the common cloaca, resulting from the destructive process which has been going on. The destructive process may have affected one side only of the os, the other only being as yet enlarged, and denser and firmer than usual. It is not uncommon to find fungous softish masses, which bleed when touched, growing from the already ulcerated surface. This ulcerative stage of the disease is almost universally characterised by the presence of an offensive leucorrhœal discharge, this discharge becoming tinged with blood after examination or after exertion. The cancerous cachexia is usually more or less well-marked—that is to say, there is a general failure of the strength of the patient, emaciation, want of sleep, and disturbances of the digestive organs, shown by nausea, vomiting, &c. And what is important, there occurs from week to week perceptible increase in the intensity of these symptoms, often a very rapid one; the skin of the patient has in many cases a remarkable straw-coloured tint; there are lancinating pains, severe in character, felt in the uterine region: at this period, also, pains depending on pressure of the enlarged uterus on the nerves in the pelvis are very commonly observed, viz. pains along the course of the sciatic and other nerves. Other symptoms attending this stage of the affection are, pains in the breasts, and, not seldom, increased sexual desire. The occurrence of 'hæmorrhages' and the presence of 'offensive discharges' are characteristic, but the value of these as signs of the presence of cancer has already been discussed (see pp. 60, 87).

* *Med. Times and Gazette*, Jan. 15, 1859.

With reference to the value of 'cachexia' as a means of diagnosis, Mr. Sibley, in his valuable 'Contribution to the Statistics of Cancer,'* makes some important remarks.

'The cachexia,' says Mr. Sibley, 'is closely proportionate to the amount of hæmorrhage, discharge, and pain. In cases where there is but little hæmorrhage and a small amount of discharge, the cachexia is hardly obvious, and this is usually observed even where the cancerous tumour has attained great magnitude. It sometimes happens that the cachexia becomes well-marked, even where there is but little hæmorrhage or discharge; but in these cases the cancer is usually found to have involved some important internal organ, and to have interfered with some vital function. On the other hand, in those patients with whom there is profuse discharge, and frequent attacks of hæmorrhage, the wasted sallow visage of advanced cancerous disease becomes obvious at an early stage of the complaint. In no class of cases is the cachexia more pronounced than in uterine cancer.' And he has come to the conclusion that 'the presence or absence of cachexia is valueless as an aid to diagnosis. It appears to be the result of a local disease, and is not to be regarded as evidence of a state of system which leads to the production of cancer.'

In a few rare cases destruction of the uterus by cancerous ulceration progresses to a very advanced stage, all the usual symptoms of cancer—pain, offensive discharge, hæmorrhages, constitutional affection—being entirely absent. When cancer of the uterus in the ulcerative stage is present, the diagnosis is not usually difficult when digital examination is practised, those rare cases excepted in which the lower part of the uterus is sound, or apparently so, there being cancerous disease of the interior of the body of the uterus. In these cases, the result of the ordinary digital examination would be liable to mislead, unless corrected by due attention to the more obvious and symptomatic signs of the presence of cancer.

The diagnosis of cancer of the uterus advanced to the stage of ulceration, and presenting to the touch the physical characters above described, is not a matter of difficulty; the difficulty lies, and especially with those whose sense of touch is uneducated, in determining that cancer is *not* present. Thus a patient may present herself suffering a good deal from pain, who is the subject of profuse menstruation, of a profuse discharge, which is, she states, occasionally 'unpleasant' to the smell. On digital exa-

* *Med. Chir. Trans.*, vol. xlii. p. 149.

mination of the os uteri, a decided enlargement and hardening is felt at one part, and a softer velvety surface at another. But the hardness and induration may be due, as already pointed out, to simple hypertrophy, inflammation or congestion of the vaginal portion: the feeling of the presence of a softer portion may be produced by the inner surface of the os, with its lining in an hypertrophied, shaggy and villous state.

It is doubtful if any other form of ulceration is capable of giving rise to changes like those produced by cancerous disease. A case related by Dr. Gibb, and reported on by Dr. Beck, would, if the opinion of the reporter be correct,* invalidate this statement, by proving that tubercular ulceration of the lower part of the uterus, of destructive character, spreading to, and opening into, adjacent visceral cavities, may occur. The tubercular nature of the case in question rests chiefly, however, on the microscopic examination, and it was considered during life as one of cancer.

A peculiar form of destructive ulceration of the cervix uteri has been in a few rare cases observed, all that has been met with on examination being *loss of substance*. The lower part of the uterus has disappeared, and in place of the cervix there is a rough irregular border, above which the body of the uterus, movable as usual, is felt by the finger: there is an 'absence of any thickening, hardness, or deposit of new matter in its vicinity,' as in carcinoma (West). This condition is described as *corroding ulcer of the os uteri*. The symptoms present in cases of this description are not distinctive. Recent writers do not confirm the observations of Sir C. M. Clarke, that the pain is peculiar in these cases. So far as the results of digital examination are concerned, corroding ulcer is characterised by absence of induration in the neighbourhood, by absence of fixation of the uterus, and by the sharpness of the margin of the ulceration. It is an interesting fact that corroding ulcer differs from cancer in respect to its fatality and duration. The observations hitherto made appear to indicate that the disease may continue for some years, indeed for several years. Dr. West believes that the affection ought to be classed with rodent ulcers.

UNUSUAL SENSIBILITY OF THE OS UTERI.

As a rule, the os and the vaginal portion of the cervix exhibit little evidence of sensibility, but under certain circumstances there is extreme tenderness of the part on digital examination. In cases

* *Trans. of Path. Soc.*, vol. vi. p. 273.

of *cancer* this unusual sensibility is very generally present, but more particularly when the ulcerative stage of the disease has arrived. In cases of *neuralgia* of the uterus—the ‘irritable uterus’ of Gooch—there is an extreme degree of sensibility present. A typical case of this kind is described by Gooch in the following words:—‘A young or middle-aged woman, somewhat reduced in flesh and health, almost living on her sofa for months, or even years, from a constant pain in the uterus, which renders her unable to sit up and take exercise—the uterus, on examination, unchanged in structure, but exquisitely tender; even in the recumbent posture always in pain, but subject to great aggravation more or less frequently.’

Tenderness, less in degree than in either of the cases alluded to, is present where the whole uterus, including the cervix, is in a state of *chronic inflammation*, whether the patient be of a ‘nervous’ temperament or not.

In *acute inflammation of the uterus*—a disease of exceeding rarity—tenderness to the touch is one of the chief signs observable.

TUMOURS PROJECTING INTO THE VAGINA FROM THE POSITION OF THE CERVIX UTERI.

Here it is intended to group together all those cases in which a mass is felt projecting into the vagina from the situation of the cervix uteri, whether constituted by an enlargement of the cervix itself, by a tumour of the part, or by a mass projecting through the os uteri.

We have now to distinguish between the following conditions:—

The various conditions known under the name ‘prolapsus of the uterus.’

Inversion of the uterus.

Polypus of the uterus, or other bodies projecting from the cavity of the organ into the vagina.

Tumours growing from the os uteri and occupying the vagina.

Concerning these several conditions, one remark applies to nearly all—that each may constitute a tumour which may project downwards and outside of the vagina, and be therefore apparent externally to the generative organs. Further, it may be remarked that these conditions may be associated with varying degrees of prolapse of the adjacent pelvic organs, of the bladder, rectum, &c.

The first point to which we direct our attention, in endeavour-

ing to determine the nature of a tumour either felt by the finger in the vagina, or projecting beyond the ostium vaginae, is the position of the os uteri. If the os uteri be found at or near the lower or depending portion of the tumour, the case is one of 'prolapsus of the uterus,' partial or complete; but if the opening be situated high up, and the tumour project considerably below it, the case comes under one of the other divisions above alluded to.

We shall first consider those cases in which *the os uteri is at, or near, the lowest part of the tumour.*

All cases of *prolapsus uteri* have this in common, that the os uteri is the lowest point. In other respects, the variations observed are exceedingly great. In the most simple form of the affection, the cervix uteri is felt rather lower than usual, and the vagina proportionately shortened. In its extreme degree, on the other hand, the uterus descends so low down as to be almost altogether outside the ostium vaginae; and in this case the vaginal canal is completely inverted, the bladder is dragged externally also, and the rectum is displaced in like manner. Thus, in a bad case of *prolapsus uteri*, we may have combined, descent of the uterus with *prolapsus* of the bladder and rectum (*vaginal cystocele* and *rectocele*).

But this is not all. The condition of the uterus itself presents very different conditions in different cases. There may be *prolapsus* of the uterus, the organ retaining its natural size and shape: this appears to be rare. It is more common for the uterus to be *altered in size and shape, as well as in position.* It may be generally too large (defective involution after delivery, chronic inflammation or hypertrophy being present), or it may be too long. It is too generally supposed that the appearance of the os uteri much lower down than usual implies descent of the whole uterus; it very frequently, however, happens that, while the os uteri is very low down, the fundus uteri remains in its natural position, the cavity of the uterus having undergone great elongation.

Huguier,* who has carefully investigated this subject, shows, from the data derived from a large number of cases, that it is a rare circumstance for the fundus of the uterus to leave its normal position in the pelvic cavity, the condition ordinarily known by the terms *prolapsus uteri*, *procidentia uteri*, descent or falling of the womb, being in the large majority of cases a descent of the cervix; the descent occurring in conjunction with elongation and hypertrophy of this part of the uterus.

* *Mém. de l'Académie Imp. de Médecine*, tom. xxiii. 1859.

Dr. Simpson, in his memoir on the uterine sound,* published previously to Huguier's treatise, shows, by quotations from several writers, that the true nature of the affection commonly called prolapsus has been always more or less well understood by several of the best authorities. In the work of Kiwisch,† the presence of elongation of the lower part of the uterus in many cases of prolapsus uteri is forcibly dwelt upon, and the fact that the fundus uteri is, under these circumstances, in its normal position, fully recognised.

In Dr. Farre's admirable essay ‡ will be found the drawing of a specimen of 'longitudinal hypertrophy of the cervix.' This drawing represents extremely well the condition described by Kiwisch, Huguier, and others.

In this country the term 'cervix uteri' is usually understood to designate the part of the uterus which projects into the vagina: the term is improperly so used, and much confusion has hence arisen; for the portion which projects into the vagina is only a part, and often a small part, of the true cervix uteri. The cervix uteri (using the term in its more extended sense) is liable to hypertrophy and elongation, and this hypertrophy and elongation may affect, as it is now known, either the portion of the cervix which is above the vagina, or that part which projects into the vagina, the vaginal portion.

In the first case, the effect of the presence of the hypertrophy, &c. is, that the os uteri occupies a lower position in the pelvis than usual, and when the elongation has reached a certain point the os uteri passes beyond the vulva, and a tumour appears externally. The os, driven downwards, carries with it the vagina, which canal is inverted, and covers the enlarged and elongated cervix. It is probable that in many of these cases the prolapsus of the vaginal wall is the circumstance which determines the prolapsus of the cervix of the uterus. The constant dragging of the vagina on the uterine cervix would naturally have the effect of lengthening the cervix. The bladder or the rectum, or both, may form part of the tumour, being dragged downwards, and accompanying the os uteri in its change of position. The sound introduced into the uterus discovers the fact that the cavity is far larger than usual, the extremity of the sound reaching as far upwards in the pelvic cavity as usual. See 'Examination by means of the Sound.'

* *Obstetric Works*, vol. i. p. 63.

† *Klin. Vort.* Band i. and ii.

‡ *Cycl. An. and Phys.*, loc. cit. p. 687.

In the second case, the hypertrophy and elongation affect only, or chiefly, the vaginal portion, and, under these circumstances, there is found in the vagina, or even protruding beyond it, a conical, firm tumour. The cul-de-sac of the vagina is in its normal position; the conical tumour is constituted entirely by the enlarged, elongated, vaginal portion. Here the length of the uterine and cervical cavity combined is much greater than usual, and here also the fundus uteri occupies its normal position.

Huguier states that in a very few cases (he has only met with two instances out of sixty-four cases of supposed descent of the uterus) the whole organ really does descend in the pelvis, or beyond the vaginal outlet; and, so far as these very exceptional cases are concerned, the views generally existing are, with certain restrictions, to be admitted. Dr. McClintock* believes that Huguier has overestimated the frequency of cervical hypertrophy as a cause of prolapsus; but he does not state whether this opinion is based on results of actual measurements by means of the sound or not. Directions as to the method of using the sound as a means of diagnosis will be given further on.

To return from this explanatory digression—if we find a conical, firm tumour, smooth on the surface, projecting downwards in the vagina or beyond it, and the os uteri situated at, or close to, its extremity, the case is one of

HYPERTROPHY AND ELONGATION OF THE VAGINAL PORTION OF THE CERVIX UTERI.

With such a condition there is usually found to be no considerable amount of prolapsus of the vagina, and the finger encounters the cul-de-sac of the vagina in about its usual position. The symptoms preceding and accompanying this hypertrophy and elongation of the vaginal portion are not necessarily of a very severe character; pain and discomfort of various kinds and degree are rarely absent; the patient usually experiences a peculiar sensation on sitting down, leucorrhœa is present, and is often very abundant, sexual intercourse is attended with difficulty, and conception does not occur. The patient may not become aware of the presence of the tumour until it has attained a considerable size. The shape of the tumour is generally conical, but it may be larger at the extremity than at the base; one portion of the lip may be larger than another, in which case the opening appears to be not quite at

* *Opus jam cit.* p. 58.

the extremity of the growth, and the os itself may be fissured and ulcerated according to the degree of irritation to which the part is exposed. The general shape, the firmness of the tumour, and the position of the os uteri, sufficiently distinguish it from other tumours occupying the vagina. The opinion of Virchow is, that this hypertrophy of the vaginal portion is connected with the presence of certain glandular enlargements in the substance of the hypertrophied part, the latter containing cavities filled with mucus of a gelatinous character. These cavities are doubtless the mucous follicles of the cervix increased in size. Huguier describes a cystic form of enlargement of the cervix uteri, doubtless identical with that described by Virchow, and which is identical, also, with that observed in a case which Mr. Spencer Wells operated on, in my presence, a few years ago.* The diseased cervix was, in the latter instance, made up of a large number of cysts, varying in size from a millet seed to that of a bean, and filled with thickened mucus. Otherwise the cervix presented the ordinary structure, and the cysts were simply enlargements of the mucous follicles of the part.

HYPERTROPHY OF THE SUPRA-VAGINAL PART OF THE CERVIX.

In this class of cases there is prolapsus of the vagina, and the finger cannot, consequently, be introduced as far as usual. The use of the sound will render it evident at once whether the descent of the os uteri, bringing with it the vagina, is due to descent of the whole uterus, or to hypertrophy of the lower part of this organ—the cervix. When the descent of the os uteri is considerable, the portio vaginalis is usually found reduced in length, the os being simply an aperture in the centre of a rounded projecting mass; the aperture is larger than usual, and the edges are everted and gaping, this being due to the fact that the os is pushed downwards, and that the parts are put on the stretch. The attachments of the cervical part of the uterus to the bladder in front are such, that when the cervix is projected downwards the bladder comes with it: the extent of the prolapsus of the bladder is, as a rule, dependent on the degree of the former. In like manner, the rectum is liable, but in a less degree, to be prolapsed with the lower part of the uterus; and the result is that in cases of extensive prolapsus of the cervix, whether with or without hypertrophy of the part, there is a soft tumour in front—the bladder, and a smaller one behind—the rectum, between which two the os uteri is situated.

* *Transactions of the Pathological Soc.*, vol. ix. p. 332.

A combined examination of the rectum by the finger and of the bladder by means of the sound, will determine whether or not the fundus uteri is in its proper position; the use of the uterine sound gives information of a like character.

TRUE PROLAPSUS OF THE WHOLE UTERUS,

is found associated with ascites, ovarian tumours (or both, as in a case which came under my own observation), or with relaxation of the vaginal structures, consequent on frequent child-bearing. Prolapsus (of all kinds) is a condition met with particularly in women whose avocations involve continuous labour in the standing position—laundresses, day-labourers, &c. One not uncommon cause of prolapsus is to be found in operation among women of the lower classes, who are frequently obliged to assume the vertical position, and engage in employments or in household duties involving straining and use of the abdominal muscles, immediately after childbirth, and at a time when the uterus is large, unwieldy, and unduly congested. As Scanzoni remarks, the predisposing causes are many, and by themselves sufficient to produce prolapsus; but in many cases slight external causes, blows, strains, &c., bring about the evil more immediately. A cause of prolapsus not mentioned in the foregoing list, is rupture of the perinæum in some previous labour.

In cases of prolapsus of the uterus, whether true or false, there are often extensive ulcerations of the inverted vaginal mucous membrane, or of the mucous membrane covering the vaginal portion, such ulcerations being dependent on the friction to which the parts thus unnaturally exposed are liable, and to the continued contact with urine.

Prolapsus, complete, or produced by hypertrophy of the supra-vaginal portion of the cervix, could hardly be mistaken for polypus, inversion of the uterus, or large tumours growing from the os uteri, if attention were paid to the position of the os in reference to the body of the tumour. Cases of hypertrophy of the vaginal portion alone might possibly be confounded with a polypus projecting into the vagina from the interior of the uterus, in those instances in which the os uteri is distorted, partially effaced, or so altered as not to be recognised as such, by a casual observer. I have known an instance in which a lady was treated for prolapsus, and made to wear a pessary for several months, the tumour, being a well-marked specimen of polypus, attached by a slender pedicle to the interior of the cervix uteri.

Prolapsus combined with Pregnancy.—In some rare cases, the uterus, although prolapsed, becomes impregnated. It would be a serious mistake to use the sound in such a case, and to induce abortion. It is sufficient here to give this caution on the subject.

HYPERTROPHY OF THE CERVIX WITHOUT ELONGATION.

Under this head may be included cases in which there is an uniform enlargement of the cervix uteri, due to the presence of hypertrophy of all the tissues of the part without elongation. The nature and varieties of this enlargement of the cervix has already been considered. It is necessary here only to call attention to the fact, that the enlargement due to this cause may be very considerable, that it is characterised by the comparatively regular, uniform character of the enlargement, and further, that the cervix, although it may be somewhat distorted, retains for the most part its ordinary shape.

The next class of cases are those in which *the tumour in the vagina is not terminated below by the os uteri*. Here we have to consider the diagnosis of two conditions, between which it has been found occasionally difficult to discriminate, viz. polypus of the uterus and inversion of the organ. There are other conditions also, the diagnosis of which will have to be pointed out.

INVERSION OF THE UTERUS.

Inversion of the uterus more usually occurs in connection with child-birth, but in some rare and exceptional instances it has occurred quite independently of pregnancy, having been produced by the presence of a large polypus, dragging the fundus uteri downward. It is an accident which is by no means common. The uterus is either completely inverted, or the inversion is incomplete, the cervix retaining partly or entirely its normal shape and position. A tumour is felt occupying the vagina, which varies in size according to the degree of the inversion, and the time which has elapsed since the occurrence of the inversion. Thus, if the inversion be recent and complete, the tumour in the vagina may be so large as to project beyond the vulva, but if some weeks have elapsed, it may be no larger than the fist, although still complete. The tumour is smooth, uniform, and no opening is to be detected on the surface. On digital examination, it is found that the vagina

terminates above, round the pedicle of the tumour, in a perfect cul-de-sac, and the surface of the tumour is perfectly continuous with that of the vagina. At the point where the os uteri should be situated this pyriform tumour projects downwards into the vagina. The tumour itself is hard and firm, and resistant when the inversion has lasted a few weeks. If the patient have been recently delivered, if a tumour has occupied the vagina since delivery, and if, further, it be known that there was no tumour previously, the diagnosis is not usually difficult to establish, provided the inversion be complete. This statement is, however, not quite universally true, for pregnancy may be associated with polypus, and the polypus may be thrust down into the vagina immediately after the expulsion of the child: Gooch and others have related cases of this kind. There is no possibility, in complete inversion, of passing the finger above the pedicle of the tumour, nor can the uterine sound be made to pass in this direction. The symptoms attending the production of inversion during labour are characteristic:—excessive pain—which may, however, be absent—prostration, syncope; the uterine tumour is no longer felt above the pubes; hæmorrhage is usually observed. Inversion may occur just at the end of labour, or a few days after, from incautious exertion on the part of the patient. Inversion of the uterus usually gives rise to frequent and profuse hæmorrhages, together with great discomfort and pain; but it does now and then happen that the symptoms are not so urgent as to attract much attention, until the disease has lasted for some time. That the symptoms and history of the case are not always demonstrative of its true nature, is proved by the fact that inversion of the uterus has been frequently looked upon and treated as polypus.

With reference to the *diagnosis of complete inversion from polypus*; in both cases the tumour is generally more or less pyriform; in both cases it is hard, resistant, smooth; in both the tumour terminates above in a constricted portion; in both there are hæmorrhage, leucorrhœa, and symptoms produced by pressure on the adjacent viscera: but in the case of inversion, neither the sound nor the finger can be passed upwards beyond the pedicle of the tumour, whereas in the case of a polypus projecting down into the vagina from the interior of the uterine cavity, an instrument can be passed into a cavity beyond the neck of the tumour; the neck of the tumour being encircled by the os uteri, the sound can be made to pass into the interior of the uterus. This distinction is not a perfectly reliable one, for there is occasionally a

difficulty in detecting the cavity above when it really exists,* and sometimes there is found to be adhesion of the sides of the polypus to the adjacent wall of the vagina or to the interior of the cervix uteri (West, Blundell); and thirdly, it may happen that the polypus grows from a part of the uterine cavity close to the orifice (Gooch). It is said that in cases of inversion the tumour is very sensible; that this sensibility is wanting in cases of polypus; that the surface of the inverted uterus is rough, whereas the surface of a polypus is smooth: but no reliance can be placed on such supposed distinctions. If an examination be made within a week after the labour, the fact that the normal uterine tumour is absent from the hypogastric region, associated with that of the presence of a rounded firm tumour in the vagina, will demonstrate the nature of the case; at a later period this remark would not hold good, or at least in the same degree. Another mode of examination, enabling us to distinguish between inversion and polypus, is the combined examination by the rectum and by the bladder, i.e. the finger introduced into the rectum, and a sound into the bladder, by which means an absence of the body of the uterus from its normal position can be substantiated (Arnott).

In cases of *partial inversion of the uterus*, the difficulties as regards the diagnosis are more considerable than when the inversion is complete. Here the pedicle of the tumour is encircled by the os uteri, as observed when a polypus projects downwards from the uterus into the vagina. In cases of partial inversion, however, the sound cannot be passed so far beyond the encircling band formed by the os uteri as usual, whereas in cases of polypus the cavity may be even longer than ordinary. A complex condition has been now and then observed, in which the diagnostic mark alluded to might fail; that, viz. in which there is a polypus of the uterus forming the lower part of the tumour, this tumour having dragged down the fundus uteri with it and produced partial inversion; where, in fact, we have polypus of the uterus *and* inversion of the uterus associated. Dr. M^cClintock † calls attention to a new diagnostic sign of the presence of inversion. It is this: when the case is one of inversion, on drawing the tumour downwards the lip formed by the os disappears; on ceasing this traction the lip is again evident. A very careful consideration of the previous history, combined with examination of the parts, are necessary to come to a correct conclusion in these doubtful cases. The tumour due

* See *Lancet*, 1827-28, vol. i. p. 237.

† *Op. cit.* p. 91.

to a partially inverted uterus is hard and firm, like a fibrous polypus; the symptoms produced by it are pretty much the same—hæmorrhages, discharges, &c.—but there is more pain, more discomfort to be looked for in the case of inversion than when there is only a polypus present. Again, the double examination by the rectum and bladder is very important in assisting the diagnosis, the more so as in cases of polypus partly projecting from the os—the particular cases, in fact, which most closely simulate this partial inversion of the uterus—the body of the uterus is generally more or less enlarged, owing to the presence of the polypus within it.

Some further remarks concerning the diagnosis of polypi from partial inversion of the uterus will be found under the head ‘Examination by the Sound.’

UTERINE POLYPI.

Various growths from the uterine cavity, or from the interior of the cervix uteri, more or less distinctly pedunculated, are classed under the general term ‘polypi.’ They may present themselves at, or may project from, the os uteri, forming usually smooth, rounded, or pyriform tumours of variable size. The tumour may be so large as to fill the vagina, or even to project very considerably beyond the vulvar aperture. The tumour is more generally characterised by hardness and density, but, in a few exceptional cases, to be presently mentioned, its structure may be much softer. The most common form of polypus is the fibrous, or fibro-cellular, made up of fibrous tissue, together with muscular fibres of the unstriated kind; the ultimate elements of the tumour being, in fact, identical with those of the uterine tissue proper. The proportion of the fibrous and muscular element vary. So also the vascularity, and therefore the softness of these tumours. Some are very vascular. A peculiar and rare form of polypus, the ‘channeled’ polypus, is described by Dr. Oldham; the peculiarity consisting in the presence of channels within, which have occasional communications, and which open by large orifices on the free surface. This latter form of polypus grows from the cervix, and the channels are probably follicles or ducts, hypertrophied and lengthened out.

MALIGNANT POLYPI.

These form a very interesting group. They occur rarely, run a course very different indeed from that of ordinary fibrous polypi

of the uterus, and hence their diagnosis is a matter of considerable importance.

There are two classes of cases comprehended under the above term, viz. *cancerous tumours*, growing from the wall of the uterus and projecting into the cavity, and the *recurrent fibroid polypus* of the uterus.

In *Cancer of the fundus or body of the uterus*, a cancerous mass, of the medullary variety, may project downwards, its lower surface being felt as a softish, rounded body. In cases of cancer in the more ordinary position, viz. at the *uterine cervix*, there may be found polypoid masses projecting into the cervical canal. Here the origin of the masses from the cervix would be apparent on slight examination. Cases of cancer of the fundus uteri are rare; fungous excrescences growing from the interior of the cervix are not so uncommon. The mass projecting at the os uteri is in both cases softer than the ordinary fibrous uterine polypus.

Recurrent Fibrous Polypus.—This is a form of polypus which consists of a growth proceeding from the inner wall of the uterus, and projecting downwards through the os in the manner of ordinary fibrous polypus, but differing from ordinary polypus, in that a new tumour is liable to grow soon after the old one is removed. Thus a case is related by Dr. West,* who terms it ‘recurrent fibroid tumour,’ in which a polypus the size of a pigeon’s egg was found protruding from the os uteri. Portions of it were torn away by repeated operations, nine of which were performed in the course of a year and a half, but the growth always recurred, and, after having been six years under observation, the patient died. Her age was twenty-two when first seen: after death a large tumour was found in the abdomen, like that in the uterus, and continuous through the uterine wall with it. Similar tumours were found in the lungs, in the pericardium, and in the body of the sixth cervical vertebra. The tumours were all alike, composed of oat-shaped cells, mingled with others of a flattened fibroid form. The tumours were lobulated, divided by septa; they were soft and elastic. The tumour within the uterus grew from a broad base.

In another very interesting case, related by Mr. Hutchinson,† there was a recurrent fibroid tumour of the uterus, assuming a polypoid shape, in a woman æt. thirty-nine, the history of which ex-

* *Diseases of Women*, 2nd ed. p. 333. For a particular account of the post-mortem appearances in this case, drawn up by Mr. Callender, see *Trans. of the Patholog. Soc.*, vol. ix. p. 327.

† *Trans. of the Path. Soc.*, vol. viii. p. 287.

tended over a period of three years ; at the end of which time the case ended fatally. The growth was polypoid in shape, soft, and lacerable, and attempts to remove it entirely failed from this circumstance. It was three times partially removed, growing again after each operation. The growth was attached by a broad base to the whole of the fundus and posterior uterine wall. It was soft, lobulated, of a grey-white colour, readily tore up into fibrils, all of which had a parallel arrangement. Nuclei and numerous small cells were seen. The tumour, very distinct from ordinary fibrous tumours of the uterus, presented no resemblance to epithelial or scirrhus cancer. There were no secondary deposits in this case.

The tumours, in both these cases, appear to have been identical with those found in other parts and known as recurring fibrous tumours. In both instances there were severe floodings, offensive discharges, and other symptoms present in bad cases of polypus uteri.

It is evident, from what has been stated, that the uterus is liable to become the seat of a growth, which is unlike cancer in everything but its malignancy. The cases are, so far as we know at present, very rare ; but it is possible that, now attention has been directed to the possibility of their occurrence, they may be oftener detected.

Respecting the diagnosis of these malignant polypi from the more common variety, it is to be remarked that the malignant polypi are softer to the touch, give rise to greater constitutional symptoms, and the patient presents an intensity in reference to the principal symptoms—hæmorrhage, discharge, prostration, &c.—which is rarely witnessed when the case is one of non-malignant polypus.

Fatty polypi are of extreme rarity. Tumours having a *fatty* composition, and growing from within the uterus, may be found projecting in a polypoid form at the os uteri. They are very rare (see p. 71). Possibly *cretaceous* bodies also might be met with, occupying a similar position. They are extremely rare.

The diagnosis of polypus of the uterus projecting at or beyond the os uteri, from inversion of the uterus, has been already considered ; concerning the diagnosis of the various kinds of polypi one from another, little remains to be added to what has been already said.

SMALLER POLYPI.

The foregoing varieties of uterine polypus may each of them attain a considerable size. There are, however, some forms of polypus of smaller size, now to be described.

Hypertrophy of the Mucous Membrane.—Small polypus-like growths hanging down, often by long slender pedicles, from the cervical cavity, and presenting themselves at the os uteri, may originate in the cavity of the body of the uterus, or in the cervix. The texture varies according to the point of origin of the tumour. They are chiefly follicular in structure when growing from the fundus uteri (Farre).

Small polypi, having a cystic structure, growing from the interior of the cervix, appear to be constituted by enlargement and partial separation of some of the mucous follicles of the cervix uteri, which are filled with albuminous-looking contents; the whole constituting masses varying in size from a barleycorn to a walnut. The chief interest attaching to the presence and detection of these small growths lies in the fact that they may occasion very troublesome and severe hæmorrhage, utterly disproportioned in its degree to the size and apparent insignificance of the little tumours.

PRODUCTS OF CONCEPTION: PORTIONS OF PLACENTA, OR COAGULA,
LEFT IN THE UTERUS AFTER LABOUR OR ABORTION.

A rounded tumour projecting from the os uteri, formed by the ovum itself, by its remains, or by a clot of blood left behind in the uterus, may be very easily mistaken for one of the forms of polypi which have been just described, the physical characters of the tumour alone being considered. The foregoing circumstances in the history of the particular case should be subjected to close investigation, in order to render the diagnosis clear. Blood-polypi of the uterus, as they have been termed, may occasion more difficulty in the diagnosis. They are probably the results of abortions: for a clot of blood may remain in the uterus for a considerable time after what has been considered to be the end of the abortion, during which interval it may have become hard, firm, and more like an ordinary polypus. It is sufficient for diagnostic purposes to mention the possibility of such an occurrence. In some rare cases, coagula of some size have been expelled from the uterus, probably unconnected with the previous occurrence of conception.

TUMOURS GROWING FROM THE OS UTERI.

These are of very variable size, shape, and consistence. The first here to be mentioned is the *cauliflower excrescence of the os uteri*, the characters of which are as follows:—from the greater part or

the whole of the circumference of the os uteri, a somewhat soft granular mass grows downwards into the vagina, at the centre of which is the aperture of the os, and above which is felt a narrowed constricted portion, the junction of the vaginal portion of the cervix with the vagina. The size of the cauliflower excrescence of the os uteri varies. The more usual circumstance is that it escapes detection at an early period of its growth, owing to the symptoms at first produced being slight; and when first discovered it may be so large as to fill the upper part of the vagina. It may grow to such a size as to reach to the ostium vaginae. Ordinarily, the growth consists of several portions, each of which is lobulated in shape, and separated by a fissure from the adjacent portion. One lip of the os is usually larger than another, and sometimes it is not at first easy to distinguish the orifice of the os between the mass of tumours in question, some of which may be as large as an apple, others smaller, but all attached to, and continuous with, the margin of the os uteri. If the patient be examined at an early stage of the growth, the os is found slightly puffed out, softer than usual, and presenting a granular feel. If the examination be made at a later stage of the disease, the vagina may be found filled and distended by a large spongy mass. At a still later period the growths may have partly disappeared, having ulcerated away, and then the os uteri may present the changes met with in the ulcerative stage of ordinary cancer of the uterus, together with those just mentioned. And in not a few cases, when the patient is for the first time examined, it is found that, while presenting well-marked tumours of the cauliflower kind, the cervix itself is hardened, greatly thickened, and the uterus more fixed than usual. We may find that above the situation of the excrescences, the cervix uteri forms a pedicle comparatively healthy in structure; the pedicle may, however, be very short, and hardly to be felt. It not unfrequently happens that growths similar to those proceeding from the os uteri are found situated on the vaginal walls in proximity to the os uteri.

The cauliflower excrescence of the os uteri, which, in the more limited application of the term, includes only epithelial cancer of the part, is soft to the touch, unless under the constricting influence of astringent injections; it has a peculiar granular feel, bleeds easily when touched, or after intercourse, sneezing, or straining; and an almost constant symptom is the presence of a copious watery, and latterly foetid, discharge from the vagina. The characteristics of this condition are physically those above stated, the

one on which most reliance is to be placed diagnostically is the origin of the mass from *all*, or the greater part of, the circumference of the os uteri. The soft pulpy mass may give to the finger a sensation like that experienced on touching the os uteri in cases of placenta prævia, but the other circumstances present would hardly admit of the two conditions being confounded.

The symptoms of this disease are frequently very indistinct at first, and if the patient be leading a quiet life they may be very indistinct up to the period when the tumour attains a considerable size. The patient grows weak, the health becomes manifestly affected, although how or why is not at first apparent. The distinctive signs, watery offensive discharge, occasional bleeding, &c., may not show themselves early in the disease, or, if observed, they may be so slight as not to attract particular attention, and thus a considerable time may be lost before the disease is detected, or its presence even suspected.

Another tumour which may be found growing from the os uteri is the *medullary tumour*. From it the cauliflower excrescence is distinguished by its regular and extensive attachment or departure from the os, the medullary tumour growing from one side or other of the cervix, and being more or less pedunculated; by its granular structure, that of a medullary tumour being more consistent, and firmer, and lobulated; and by the progress of the case, which advances much more rapidly to a fatal termination when the tumour is a medullary one. These medullary tumours have a surface more firm and even than that of the cauliflower excrescence, but not so firm as that of a *fibrous polypus* projecting into the vagina. From the latter tumour it would also be distinguished by the nature and the mode of attachment, the pedicle of the polypus being surrounded by the os uteri, whereas the medullary tumour grows from the side of the os, and not from the interior of the uterus. Profuse hæmorrhages, fœtid discharges, &c., may be observed equally in cases of medullary tumour, and of polypus. In those cases of polypus where the tumour is so large as to fill the vagina, or where the surface of the mass is apparently, or actually, adherent at the os, the diagnosis might be attended with difficulty. The presence of a large medullary mass growing from the os uteri is not, it must be remarked, a common phenomenon in cases of cancer of the uterus.

Cystic Enlargement of one Lip of the Os Uteri.—The nature of the cystic tumour of the cervix present in certain rare instances has been already discussed (see p. 264). The tumour may be so con-

siderable in certain cases as to simulate a tumour of the medullary character, from which, however, it would be distinguished by the greater smoothness and firmness present in the former, and by the absence of the foetid discharge, hæmorrhages, &c., observed in the latter. The course of the disease in cases of cystic enlargement is essentially a chronic one.

CHAPTER VI.

EXAMINATION OF THE UTERUS BY MEANS OF THE SOUND.

General Objects for which the Sound is used—Method of Introduction—Difficulties encountered.

LENGTH OF THE UTERINE CANAL GREATER THAN USUAL: due to, Recent Delivery—Longitudinal Hypertrophy of the Uterus—Fibrous Tumour of the Uterus—Polypus of the Uterus—Hypertrophy of the Uterus—Cancer—Tubercle.

UTERINE CANAL SHORTER THAN USUAL—Congenital—Stricture or Obliteration of Canal by Pressure of Tumours—Partial Inversion.

ALTERATIONS IN THE DIRECTION OF THE CANAL—Flexions and Versions of the Uterus.

‘It is possible,’ says Dr. Simpson, through whom, in this country at least, the use of the instrument became known, ‘by the use of a uterine sound or bougie introduced into the uterine cavity, to ascertain the exact position and direction of the body and fundus of that organ; to bring these higher parts of the uterus, in most instances, within the reach of tactile examination; and to ascertain various important circumstances regarding the os, cavity, lining membrane, and walls of the viscus.’

The sound itself is a slender rod of flexible metal, terminated by a slight knob at one end and by a flat handle at the other. It is graduated in inches, and at $2\frac{1}{2}$ inches from the bulbed end there is a slight projection. The instrument is very slightly curved at this point.

This instrument must never be used without a previous digital examination, and there are circumstances under which the uterine sound is not to be used at all—that is to say, where there is the slightest reason for suspecting that the patient is pregnant. The introduction of the sound into the uterus under these circumstances would almost inevitably occasion miscarriage or abortion. In cases where the patient is the subject of amenorrhœa, this caution is particularly appropriate; for during the early months of pregnancy she is sometimes unaware of her condition, or desirous of concealing the fact when known to her. Under such circumstances, the sign on which it is customary to place most

reliance in deciding as to the propriety or not of using the sound is the presence or absence of *softness* of the vaginal portion of the cervix and of the edges of the os uteri; and, where the softness in question is detected, to refrain from using, or at all events to postpone the use of, the instrument until the nature of the case is made more evident in other ways. As it must be admitted, however, that the presence or absence of this sign is by no means a positively sure criterion, unless perhaps in very experienced hands, it will not be safe to rely exclusively upon it: it will be better, in a case where there is the slightest doubt, to be on the safe side.

Another caution is required. It is not so very uncommon for women to suffer from slight losses of blood at the beginning of pregnancy; such losses might be readily taken to be evidence of menstruation, and the sound might in such cases be injuriously used.

It has occasionally happened that the sound has been introduced into the pregnant uterus, and no evil result has followed. It is thus shown that the instrument may pass into the decidual cavity between the decidua uterina and decidua reflexa without *necessarily* inducing abortion.

As a general rule, patients experience no inconvenience from the use of the sound, if it be carefully introduced; but in a few cases the passage of the instrument gives great pain, and its use should not then be persevered in.

Method of Introduction.—The patient is conveniently placed for the use of the sound, either lying on the left side close to the edge of a high couch or bed, or lying on the back: as a general rule, the former position is preferable. The fore-finger, or the first and second fingers, of the left hand are first introduced into the vagina, and the tip of the finger brought into contact with the os uteri. The left hand is more conveniently used for this purpose, leaving thus the right hand free to use the sound. The uterine sound, previously warmed and oiled, is then lightly grasped by the right hand, and the point of the instrument carried slowly towards the os uteri, the fore-finger of the left hand being made use of as a director. If these directions be well attended to, the point of the instrument is readily made to hit the orifice through which it is desired to pass the instrument. When the point of the instrument is engaged in the os uteri, the first part of the operation is completed. If the patient be lying on the back, the left hand is more conveniently used to hold the sound than the right.

The passage of the sound through the canal of the cervix and

into the cavity of the body of the uterus requires very careful management, and occasionally is only to be accomplished by those possessed of considerable dexterity. It is imperatively necessary to bear in mind that the introduction of the sound should be accomplished without using the smallest degree of force; resistance encountered is not to be overcome in this manner. Ordinarily, if the operator has introduced the sound in the proper direction, the curvature of the instrument and the curvature and direction of the canal being identical, the instrument is easily made to pass upwards until the knobbed extremity reaches the fundus uteri. Normally, the canal of the uterus passes at first upwards in the direction of the pelvic axis, but higher up there is a slight inclination forwards (Bennet). This slight inclination forwards is usually sufficiently provided for by the curve given to the sound. If the uterus be of the average size, the instrument can be introduced $2\frac{1}{2}$ inches beyond the os uteri, and the projecting elevation on the convex side of the curve of the sound is felt by the forefinger to coincide with the os uteri. When the sound has been introduced a couple of inches, greater care is required in pushing it onward. It occasionally happens that the tissue of the uterus is diseased, and so soft, that an instrument such as the uterine sound may be driven through the fundus by the exercise of force not very great in amount. The advisability of avoiding all risk of such an accident need not be enlarged upon.

The sound is sometimes used through the speculum. It is far preferable, however, to introduce the sound in the manner above described; I believe that there is far more risk of doing injury to the uterus when the sound is used in conjunction with the speculum.

Supposing that an impediment is encountered to the introduction of the instrument, this may proceed from one of the following causes:—

The point of the instrument is not directed in the axis of the canal. This is the most common cause of difficulty, and it is one which is only to be got over by practice. It is often necessary to withdraw the instrument and bend it so as to give it a different curve. If the actual direction of the vaginal portion of the cervix be previously ascertained by digital examination, this difficulty is less likely to occur.

The os is not pervious to the instrument. This is a cause of difficulty which is generally anticipated by digital examination, for the practised touch easily recognises the presence or absence

of the depression and opening of the os uteri. In cases where the finger fails to find an aperture, it may be necessary to have recourse to the speculum, in order to ascertain by actual inspection of the part whether a minute opening can be detected. The absence of an opening is rare; such a condition is, in most instances, a congenital one, and the patient has never menstruated. In a few cases, however, the os becomes sealed up, no trace of its existence being observed, in women who have had children, and also, rarely, in women who have been subjected to operations the nature of which is such as to lead to contraction of the tissues around the os uteri.

Contraction of the Canal of the Cervix.—When the instrument is engaged in the canal, its further passage may be prevented by contraction of the canal itself. It is not very common to meet with an obstruction to the passage of the instrument, from this cause at least, lower down than 1 inch or $1\frac{1}{2}$ inch from the os uteri, although the occasional existence of contraction at this point, congenital or acquired, is not to be denied. The cavity of the cervix uteri is tolerably capacious, but at its superior termination the canal is ordinarily narrowed; and in the nulliparous uterus it is customary to find that when the instrument reaches the point of junction of the cavity of the cervix and the cavity of the body of the uterus, there is a slight resistance. It is Dr. Bennet's opinion that the normal diameter of this part of the canal is not such as to admit the passage of the bulbed extremity of the ordinary rigid sound. The diameter of the knobbed part of the sound is usually $\frac{1}{8}$ inch. Dr. Bennet is of opinion that at the situation of the internal os uteri a sort of sphincter is present. In women who have had children, however, this kind of difficulty no longer exists. Without exercising anything like forcible pressure, this ordinary resistance, as it may be termed, is readily got over. It requires care to discriminate between contraction and those other conditions which may impede the progress of the instrument, next to be alluded to.

The point of the instrument may become engaged in one of the lacunæ or depressions of the cervix uteri, and its further progress arrested thereby. This is one of the most common causes of difficulty in introducing the uterine sound. By gently withdrawing the instrument and again introducing it, at the same time slightly altering the direction in which it is pointed, this kind of difficulty will be readily overcome.

The point of the instrument may be arrested by the *existence of*

curvature or distortion of the canal of the uterus. When the uterus is bent backwards (retroflexion) or forwards (anteflexion), the instrument is stopped abruptly at the seat of the flexure. When the resistance met with is due to retroflexion, a tumour may be felt behind the upper part and back of the vagina—the fundus uteri; and it is necessary, before introducing the sound, to turn it so that the concavity is directed not forwards, but backwards. With a little management, the sound then passes round the curved part of the uterine canal, and backwards into the centre of the fundus uteri. In like manner, in the case of anteflexion, the obstacle to the introduction of the sound is to be removed by giving the instrument a sharper curve forwards than usual, the concavity in this case being directed anteriorly.

We have now to consider the indications derivable, as regards the condition of the uterus and of the adjacent parts, from the use of the uterine sound.

In the use of the sound we have, of course, a very complete and easy method of measuring the *length of the cavity* of the uterus. These variations are themselves signs of great value in the diagnosis of uterine disease; the deductions to be drawn therefrom are now to be pointed out. Professor Simpson has, in one of his original memoirs on the uterine sound,* so fully considered this branch of the subject as to leave little to be added. In the following remarks, I have chiefly followed the account given in the memoir in question. The usual length of the uterine canal from the os to the fundus is $2\frac{1}{2}$ inches, but a slight increase or a slight diminution of this measurement (e.g. to the extent of $\frac{1}{4}$ inch) is very frequently observed, and quite consistently with the uterus being in a healthy state.

THE LENGTH OF THE UTERINE CANAL GREATER THAN USUAL.

This may be caused by any one of the following conditions:—

Recent Delivery.—If the woman has had a child, the increased length may be due to a persistence of the hypertrophy with which the uterus is affected in consequence of pregnancy. After delivery, the uterine cavity measures from six to eight inches, and this measurement is found gradually to diminish, until after six or eight weeks it resumes, under ordinary circumstances at least, its previous size. It is obvious that the uterine sound is capable of rendering valuable assistance in the diagnosis, in cases where it

* *Obstetric Works*, vol. i. p. 63.

becomes a question as to the presence of 'signs of delivery.' For, on the one hand, where the patient was desirous of concealing the circumstance of her having been delivered, the sound would put us in possession of the fact of the uterus being larger and longer than usual—a condition the existence of which would have to be explained; and, on the other, in a case where the patient was desirous of having it believed that delivery had recently occurred, nothing of the kind having in reality taken place, the sound would inform us that the cavity was of the normal length, and that therefore recent delivery of a child was impossible. The examination should follow the date of the supposed delivery pretty closely in order that the inference drawn from the premises alluded to may be of a decisive value. Further, the mere fact of the cavity of the uterus being considerably increased in length would not of itself be sufficient to justify us in stating that recent delivery had occurred: as will be explained immediately, the cavity of the uterus may be lengthened from other causes. In a woman who has within the last few months borne a child, and the cavity of whose uterus is longer than it should be, there is presumptive reason for suspecting that it is a case of defective involution of the organ after delivery.

Longitudinal hypertrophy of the uterus is another condition of the organ in which the sound passes inwards for a greater distance than usual. This species of hypertrophy occurs quite independently of pregnancy. For the most part the cervix of the uterus is the portion affected: this is lengthened out and extended, whereas the cavity of the body of the uterus remains nearly as usual, or, at all events, participates but little in the change.

It has been elsewhere explained (see p. 260), that in many cases where the uterus is apparently prolapsed, the os uteri being very low down, this does not proceed from prolapsus of the whole organ, but from the presence of hypertrophy and elongation of the cervix alone, of that part of the cervix which is above the vagina. The sound, when used under these circumstances, is a most valuable means of diagnosis. In prolapsus constituted by hypertrophic elongation of the cervix, the sound can be made to pass upwards for a much greater distance than usual. Dr. Simpson mentions cases in which it passed inwards to a depth of four or five inches; and Huguier, whose observations are more recent and extensive, in the average of a large number of cases, found the length of the uterine canal to be $4\frac{1}{2}$ inches; in extreme cases, a length of 9 inches was attained. In some cases which I have examined, with

the object of testing Huguier's statements, the results were such as to fully confirm their truth and accuracy. In two cases, I found the length of the uterine canal to amount to as much as $6\frac{1}{2}$ and 7 inches respectively. There is a fallacy connected with the use of the sound in these cases, with which it is well to be acquainted, in order that an erroneous inference may not be drawn. The sound is sometimes arrested, two inches or so from the os uteri, by the curve which the lengthened cervix uteri makes at this point, and in one instance I found it necessary to pass the finger into the rectum, when, by pressing against the convexity of the curve in question, the sound readily passed inwards between two and three inches further. The lengthening of the *cervix* associated with apparent prolapsus has been more particularly enlarged upon by Huguier. Professor Simpson calls attention to the fact of its association with the presence of tumours of the uterus or ovaries, by which the fundus of the uterus is drawn up, and the length of the cervix thus increased. This enables us to divide our cases into two categories,—(a) those in which the *cervical* cavity is lengthened and at the same time prolapsed—a condition met with, according to Huguier, chiefly in laundresses, and individuals whose avocations render long-continued standing necessary, and which I have observed in several cases among the out-patients of St. Mary's Hospital, the most marked instances being those of laundresses; and (b) those in which the *uterine and the cervical cavity* are both lengthened, the os uteri remaining at or about its usual place, at the summit of the vaginal canal, or not remaining in this position. I have seen a case in which tumour of both ovaries was present, the upper part of the uterus was dragged up, and at the same time the lower part was pushed downwards. The canal of the uterus had an excessive length.

Fibrous tumours of the uterus frequently occasion a considerable increase in the size of the cavity of the organ—a circumstance rendered evident by the use of the sound. The size of the tumour may, however, be considerable, and the size of the uterine cavity remain unaffected. If the tumour be situated externally to the uterus—that is to say, if it grow beneath the peritoneum—it may attain an enormous size, without entailing any considerable alteration in the size of the cavity of the uterus. When the original seat of the tumour is, on the other hand, beneath the lining membrane of the uterus, the cavity of the uterus is constantly, or nearly so, increased in size, the increase being almost directly in proportion to the size of the tumour. When the fibrous

tumour grows in the centre of the thickness of the uterine wall, the cavity is increased in size, but not to so great an extent as when it is situated nearer the lining membrane. The increase in the length of the uterine cavity due to the presence of fibrous tumour may reach to such an extent, that the sound passes in to a depth of six, seven, or eight inches. A possible fallacy Dr. Simpson calls attention to in connection with this subject. In long-standing cases, it sometimes happens that the pressure produced by large fibrous tumours occasions the opposite sides of the uterine cavity to adhere, and the sound is arrested some distance below the real position of the fundus uteri.

The diagnosis between lengthening of the cavity caused by dragging of the fundus of the uterus upwards, and that caused by the presence of fibrous tumour in the walls of the uterus, turns on the relation which is found to subsist between the sound while in the uterus, and the tumour occupying the pelvis and projecting upwards in the hypogastric region. As a general rule, when an ovarian tumour is dragging the fundus uteri upwards, and thereby lengthening its cavity, the sound is found to be anterior to the tumour. To this rule there may be occasional exceptions, and when the tumour is situated laterally in reference to the sound, this means of distinguishing between the two is not available. When the tumour dragging up the uterus is extra-uterine, one side and corner of the uterus is generally more drawn up than the other: this gives the course of the sound upwards a certain obliquity, often characteristic.

Fibrous Polypus of the Uterus.—When the polypus remains within the cavity of the uterus, the length to which the sound can be introduced is increased in proportion to the size of the polypus. By means of the sound, a very perfect idea can be obtained of the relations and place of attachment of the polypus, for the point of the instrument can be made to travel round the included mass between it and the uterine walls. Care must be exercised not to fall into the error of taking the pedicle of the polypus for the summit of the uterus; it is possible for the point of the sound to be arrested at this point when first introduced.

Hypertrophy of the Uterus.—The increased length of the uterine cavity may be due to hypertrophy of the organ, a condition which is now and then found to be present, unassociated with any of the conditions causing lengthening of the cavity hitherto described. The lengthening which occurs in connection with this condition is never very considerable in amount, the measurement not generally

exceeding $3\frac{1}{4}$ to $3\frac{1}{2}$ inches. This hypertrophy of the uterus, and consequent lengthening of the canal, may be due to chronic inflammation, to long-continued congestion of the uterus, repeated miscarriages, or to defective involution of the uterus persisting for a long time after delivery.

In *cancer of the fundus of the uterus*, the organ might be found unduly lengthened, without marked evidence of disease of the same kind at the cervix. In the very rare disease, *tubercle of the uterus*, elongation and increase in the size of the organ has been observed to be present.

In attempting to ascertain the cause of undue lengthening of the uterine canal in the case actually before us, it is always necessary to examine carefully into the previous history of the patient, and to compare the results of examination by the sound with those derived from examination of the hypogastric region of the abdomen, &c. It is indeed, in all cases, advisable to come to no conclusion until a combined examination by the sound internally, and by the hand placed over the hypogastrium, has been performed.

THE UTERINE CANAL IS SHORTER THAN USUAL.

When the depth to which the sound can be introduced is less than usual, this may proceed, following Dr. Simpson's classification, from one of the following causes:—

Preternatural Shortness of the Organ generally—a congenital condition.—This congenital shortness of the canal is met with where the uterus is imperfectly developed, the whole organ being smaller than usual, or in cases in which the organ is unequally developed on the two sides. The condition of the external generative organs may be apparently quite normal, and the sexual instinct present to the usual degree, and yet there may be imperfect or defective development of the uterus itself. The uterus may be double, or one side only may be developed, or one side may be developed to a certain degree, and on the other side may be found a less fully developed cornu. These conditions are not frequently met with in practice,* but the possibility of their occurrence must be kept in view, or the results of examination by the sound might prove embarrassing. The relation subsisting between congenital defects of the vagina and those of the uterus have been described in previous pages.

* For further information on this subject the reader is referred to the very elaborate work of Kussmaul, *Von dem Mangel, der Verkümmernng und Verdopplung der Gebärmutter*. Würzburg: 1858.

Stricture of the Uterine Canal, or partial Obliteration due to Pressure of Tumours, &c.—The apparent shortening of the canal due to stricture has been already alluded to in speaking of the difficulties attending the introduction of the sound. In old people the internal os uteri, which is the point at which the stricture, when present, usually exists, is often obliterated (Mayer, Matthews Duncan). The cavity of the uterus proper—that is to say, the portion above the internal os uteri—may also be obliterated, and the sound is then arrested at the same point. When the canal is obliterated by *pressure*, as by large fibrous tumours growing in the walls of the uterus, shortening of the canal may be a consequence.

Partial Inversion of the Uterus.—The shortening due to partial inversion could not possibly be mistaken for that due either to stricture or imperfect development of the uterus. In partial inversion, there is a tumour projecting from the os uteri; the sound passes into the os uteri by the side of this tumour, but cannot be introduced so far as usual. Practical experience has shown that, in some cases, the diagnosis between partial inversion and polypus of the uterus is one of the extremest difficulty; but with the aid of the data obtainable by a careful use of the uterine sound, we may hope to surmount this difficulty. The important diagnostic fact is, that the sound passes inwards to a less depth than usual on *all sides* of the projecting mass. If the case be one of polypus, the sound passes inwards to the usual extent, and the hand over the hypogastric region discovers the fundus of the uterus in its usual place. When polypus is *combined* with partial inversion, the difficulty is greatly increased, and in such a case careful measurement of the depth of the cavity, careful examination of the tumour itself, and careful examination *per rectum*, and of the hypogastric region, must all be brought to bear in forming a decision. (See also p. 268.)

Atrophy of the uterus is in rare instances observed after labour; here also the cavity of the uterus is shorter than natural. (See p. 47.)

Lastly, the caution may be repeated, that flexion of the canal, causing arrestment of the progress of the instrument, *may* be confounded with actual shortening.

ALTERATIONS IN THE DIRECTION OF THE UTERINE CANAL.

When, in order to reach the fundus uteri with the point of the sound, it is necessary to curve the instrument *backwards*, this indicates, of course, that the canal itself is curved in that direction,

and that retroflexion of the uterus is present. This retroflexion may be the only morbid condition present, in which case the length of the cavity is the same as usual; it may be a little less in the case of retroflexion of the nulliparous uterus. The retroflexion may be associated with a more or less hypertrophied condition of the fundus uteri, or with the presence of fibrous tumours in the posterior or upper portion of the uterus. Whatever be the exact cause of the displacement in question, the condition itself is easily made obvious by means of the sound. Having introduced the sound into the displaced fundus, further information may be obtained as to the condition of the uterus. If there be no adhesions forcibly retaining the fundus in its unnatural position, it will be generally possible, by gently turning the handle of the sound half round, to restore the fundus to its proper position, and to give the canal of the uterus its normal direction. When the manœuvre is successful, the finger in the vagina feels the tumour behind the cervix uteri retiring from this position; and when the restoration is complete, the tumour constituted by the displaced fundus uteri is no longer to be felt in its former position. When the retroflexion has existed for any considerable time, adhesions may or may not have formed, binding down the fundus uteri. In the majority of cases, adhesions do not exist, or, at all events, the possibility of replacing the fundus by means of the sound would appear to indicate that such is the case. When the point of the sound, together with the fundus uteri, have been turned forwards, we are in a position to learn somewhat of the nature of the retroflexion, by observing what takes place. In some cases, the uterus, having been replaced, remains in its proper position, but in many cases, in the majority indeed, the retroflexion returns when the sound is withdrawn. It is a good plan, after restoring the uterus to its proper position, to let go the handle of the instrument; it frequently happens that the instrument, slowly or quickly, according to the degree of resistance the flexion offers, revolves, until the concavity is again turned completely backwards. It is obvious that those cases will be most easily cured in which the uterus remains longest in the position artificially given to it. In endeavouring to turn the fundus forwards, it would not be proper to exercise anything like force: if there be no adhesions, the necessary reduction is easily effected, and if adhesions be present, the sound could not be turned forwards, unless by using force to an unwarrantable degree, and the uterus might be torn, but the retroflexion unaffected.

While the uterus is in its proper position, the sound still within its cavity, it will be useful to examine the fundus from the hypogastric region, with a view to ascertain its condition as to size, shape, &c. The upper part of the uterus can be thus subjected to such a complete scrutiny as would be impossible without the aid of the instrument.

In *anteflexion of the uterus*, the canal is bent forwards—an exaggeration of the normal inclination in this direction. When this condition is present, the instrument can be usually introduced without altering the natural curve of the instrument, by simply inclining the handle towards the coccyx when the point reaches the internal os uteri.

In *retroversion* and *anteversion of the uterus*, the canal is not bent on itself, but it is displaced. Thus, in retroversion, the axis of the canal is more or less horizontal, instead of coinciding with the axis of the pelvis, and in anteversion the same thing occurs—the only difference being, that in the first case the os uteri is nearer the symphysis pubis than usual, while in anteversion the os approaches the promontory of the sacrum. This definition applies to a typical case. Practically, it is found that when retroversion is present, there is combined with it a certain amount of retroflexion, and the same holds good, but in a less degree, with reference to anteversion. Moreover, the displacement of the canal is not always such that the canal maintains its usual position in the middle line of the body; the circumstance which determines the one displacement, often determines the other also. When the direction of the canal is altered, so that it no longer preserves its median position—a fact indicated by the direction the sound must be made to pursue—this very often indicates the presence of a tumour, e.g. ovarian cystic tumour, or fibrous tumour of the uterus. A small extra-uterine tumour within the pelvis, whatever be its nature, does not effect a material alteration in the direction of the canal of the uterus. It is chiefly in cases where the bulk of the tumour is greater, and particularly in those cases where it encroaches on the abdominal cavity, that the displacement of the canal of the uterus is most marked. In such cases, a knowledge of the direction of the uterine canal is of most material assistance, and this we can always obtain by the use of the sound. We can thus ascertain whether the great bulk of the tumour be behind, in front of, or situate laterally with respect to the uterine canal, and whether the tumour be separable or not from the uterus. This subject will again be considered in pointing out the diagnosis of abdominal tumours.

CHAPTER VII.

EXAMINATION OF THE OS UTERI BY MEANS OF THE SPECULUM.

General Rules respecting the Use of the Speculum—Method of Introduction.

ANATOMY AND PATHOLOGY OF THE OS AND CERVIX UTERI.—Normal Appearance of the Os Uteri—Conditions of the Interior of the Os described as ‘Ulceration’—Erosion, Excoriations, and Ulcerations of the Vaginal Part of the Cervix, including Syphilitic and Cancerous Ulcers—Enlargement of the Structures surrounding the Os; Inflammation, and Changes described as Inflammatory—Importance of Lesions of the Os and Cervix Uteri.

By the use of the instrument known as the ‘speculum,’ we are able to obtain ocular evidence of the condition of that part of the uterus which projects into the vagina, and of the orifice or os uteri.

The method of examination in question is the means of giving us information which it would be impossible to obtain in any other way. Respecting the importance and value of the information so acquired there has been very much discussion. By some practitioners the use of the speculum is considered altogether superfluous, it being contended by such that information as to the condition of the os and cervix uteri, sufficient for all practical purposes, can be obtained by means of a digital examination, and without having recourse to the use of this instrument. By others the use of the speculum is considered essential whenever a certain series of symptoms present themselves; and by a few the speculum is used much more indiscriminately. The question of treatment is necessarily almost inseparably connected with the question of diagnosis, for it happens that those who are more especially in the habit of having recourse to the speculum as a means of diagnosis, hold peculiar views as to the pathology and treatment of uterine affections, and these views involve the adoption of a treatment in the application of which the speculum is necessary.

It is not intended in this place to discuss at any length a question which, involving as it does considerations of a moral as well as of a pathological nature, every practitioner must and will decide for himself. It is absolutely necessary, however, to lay down some

general rules for the employment or avoidance of the speculum as a means of diagnosis.

The speculum should never be used without a previous digital examination. The digital examination will be the means of informing us whether the state of the parts be such as to render it *unadvisable* to use the instrument, as in cases of cancer advanced beyond the first stage, or when the hymen is present; or *impossible*, as when the vagina is occupied by a polypus or by other tumours, narrowed by adhesions, &c. Further, a knowledge of the size, length, &c., of the vagina, ascertained by means of a digital examination, is necessary in order that the instrument selected may be adapted to the peculiarities of the case. The use of the speculum is as a rule objectionable in the case of young unmarried women, and more especially in those in whom the hymen is intact. For purposes of diagnosis the use of the instrument can but rarely be considered essential under such circumstances.

The cases in which the speculum is most commonly used for purposes of diagnosis are the following:—Cases of obstinate leucorrhœa in which there is reason to suspect the presence of an abnormal condition of the cervix uteri and of the glands there situate; cases of *menorrhagia*, or recurring hæmorrhage, for the purpose of ascertaining the presence or absence of small *polypoid* growths within the os uteri, and which may be so small as to be not detected by digital examination; cases in which it is considered advisable to examine ocularly the condition of the portio vaginalis and os uteri, and thus of obtaining evidence as to the presence and nature of ulcerations, abrasions, excoriations, &c., of the parts in question. Those who attach special importance to the presence of such ulcerations, abrasions, or excoriations of the os uteri, make use of the speculum chiefly for the purpose of detecting and treating these pathological conditions. Lastly, it is employed in cases in which it is considered advisable to explore the interior of the uterus itself, the cervix uteri having been previously dilated by the use of tents or dilators of other kinds.

Method of using the Speculum.—When it has been decided that the aid of the speculum is necessary, the question arises as to the particular form of instrument to be selected. It is obvious that no general rule can be laid down on this point; if the vagina be small, the instrument chosen should be of corresponding dimensions. It is only necessary to premise that the size of the outlet of the vagina is by no means an indication of the size of the canal higher up. The speculum used should be always, however, sufficiently long, or

it may be difficult to obtain a view of the os uteri, owing to the instrument pushing the uterus upwards and lengthening the vagina. The peculiar form of speculum selected is not a matter of vital importance; for ordinary purposes Coxeter's bivalve speculum is perhaps the most universally applicable. The cylindrical glass speculum of Fergusson is also a most valuable instrument; it is very cleanly, and has the advantage that it does not so readily tarnish as the metal speculum. It is necessary, however, to be provided with two or three different sizes of the instrument to meet all possible emergencies. In some cases a gutta percha speculum is useful, when the vagina is distorted and access to the os is difficult; such an instrument can be moulded by the aid of hot water to the shape, size and length necessary. Some little difficulty will be generally encountered by a beginner on introducing the speculum for the first time, whatever be the form of instrument chosen, but with a little experience it is almost as easy to obtain the object desired with one form of instrument as with another, the variations in the length of the vagina being allowed for.

The ordinary obstetric position, viz., the patient lying on her left side close to the edge of the couch or bed, and with the back turned towards the observer—is usually found the best, but the couch or bed should be an elevated one, otherwise this method of examination is found to be more irksome than the other. The advantage of the examination in the ordinary obstetric position is that there is little or no exposure of the patient. Or, the patient is placed on the back, the thighs separated, and precautions having been taken by adjustment of sheet or clothing, to avoid more exposure than absolutely necessary, the introduction of the speculum is then effected. This method of introduction possesses some advantages over the one previously described, but these advantages are in ordinary cases not considerable.

In a few instances, as when the speculum is used to explore the condition of the vesico-vaginal septum in cases of fistulæ, it is advisable to place the patient on her hands and knees, so as to give the observer a good view of the roof of the vagina. The duck-bill speculum is the best to use in this class of cases.

The speculum, previously well oiled and warmed, is to be introduced in the following manner:—the labia and nymphæ are to be separated by the fingers of the left hand, and the instrument slowly and gradually passed upwards and backwards in the known direction of the vaginal canal. The difficulties encountered are; first, in finding the orifice of the vagina, which difficulty is re-

moved by using the left hand as directed; and secondly, in overcoming the resistance offered by the spasmodic contraction of the muscular fibres surrounding the outlet, which contraction is occasionally considerable. These difficulties passed over, the instrument is easily made to traverse the vaginal canal to the required extent. The next object to be attained is to include the portio vaginalis and os uteri in the canal of the speculum, and this is often not accomplished without some little trouble. When the bivalve speculum is used and has been introduced to the necessary extent, the withdrawal of the stopper is effected by turning the screw by means of which the blades are separated; and in most cases the os uteri is found to have fallen into the canal of the speculum, on making an inspection after its removal. But if the speculum be too short, or has not been introduced far enough, or if the cervix uteri be obstinately fixed and inclined in an unusual manner, further manipulations may be necessary in order to obtain the required view of the os and cervix. It is better to withdraw and re-introduce the instrument if the os uteri is not at first brought into view.

Lastly, it is generally necessary, by means of a dossil of lint held at the extremity of a pair of long dressing forceps, to remove the secretions with which the surface of the exposed part is covered, in order that the mucous membrane itself may be inspected.

Information obtained by the use of the Speculum.—Of the shape and size of the os and cervix uteri we are able to judge without using the speculum at all, and by digital examination alone; and in fact the speculum only serves to confirm previously acquired knowledge on these points. The speculum is chiefly of use in ascertaining the colour of the surface, minute textural changes in the mucous membrane covering the part brought into view, the condition of the entrance of the cervix uteri and the mucous membrane of the canal, and the physical characters of the discharges proceeding from the interior of the cervix and adjacent surfaces.

ANATOMY AND PATHOLOGY OF THE OS AND CERVIX UTERI.

The differences of opinion respecting the treatment of uterine diseases, are for the most part dependent on a difference of ideas entertained with reference to the pathology of the os and cervix uteri. Various questions relating to the anatomy and pathology of the parts in question will have therefore to be considered in conjunction with the determination of the diagnosis of the diseases

of the os uteri by the aid of the speculum. The *coverings and surface* of the os and cervix uteri, its *substance*, and the extensive *glandular apparatus* which lines the cervix: to each of these must be assigned its due importance in offering an interpretation of the pathological alterations which may be met with.

The '*os uteri*' is the lower opening of the canal of the cervix. It is a round opening, occasionally, however, transverse in shape, and it is bounded by two 'lips,' an anterior and a posterior, of which the posterior is the larger. This difference arises from the fact that the anterior lip is less exposed than the posterior, the latter forming a greater projection into the vagina. In regard to the *size* of the opening there is considerable variation, the greatest difference existing between the case of one who has and one who has not borne children. The lips are moreover smooth, uniform, and regular when the woman has had no children, but the surface is more or less fissured, the os uteri being bounded by less regularly formed lips in women who have had children. The virgin os uteri is uniform, the vaginal portion regular and conical in shape; that of multiparæ is larger, irregular, and usually softer.

The appearances presented by the surface of the os uteri it is particularly important to bear in mind. The lips of the os uteri,—that is to say the surface of these lips—present an appearance very different from that which is presented by the *interior* of the os uteri, and under ordinary circumstances the view obtained by the speculum is not simply that of the labia of the os, but of a portion of the interior of the cervix also. The surface of the interior of the cervix differs greatly in appearance from that presented by the surface of the labia, both in regard to the colour and in other essential particulars, and there is an abrupt line of demarcation always evident, and generally remarkably so, between the surface of the interior of the cervix and that of the labia of the os uteri.

The *lining of the cervix uteri*—the minute anatomy of which was first thoroughly described by Dr. Tyler Smith—is not smooth, but furrowed and plicated so as to present numerous depressions and elevations, by which the amount of surface is very largely increased. The arrangement of two folds or plicæ varies in different cases. There are usually four prominent elevations longitudinally placed, and four columns of rugæ or folds of mucous membrane; and lateral transverse branches are giving off from these, the whole thus acquiring a palmated aspect; and between these different elevations are seen others more minute. The

whole surface thus presents a cribriform aspect. In the recesses formed are the openings of multitudes of glandular crypts. The observer, under ordinary circumstances, sees the lower and a small portion only of the surface of the interior of the cervix.

Contrasting with the cribriform irregular surface just described, the labia of the os uteri present a smooth uniform mucous surface. The labia may themselves be lobulated and thus irregular, but the surface itself is smooth and uniform. The epithelium covering the labia is of the squamous variety, identical with that lining the vagina, but *within the cervix* the epithelium changes and the surface is covered by cylindrical epithelium. Higher up within the cervix, and therefore usually beyond observation by means of the speculum, the epithelium becomes ciliated.

Such are the normal characters of the surfaces presented to the view by means of the speculum. It is necessary in the next place to describe the anatomy of the parts immediately beneath these surfaces, the interpretation of certain pathological appearances by-and-by to be alluded to, requiring a knowledge of these.

The surface of the labia is covered by a somewhat thick layer of squamous epithelium, as already remarked. Beneath this epithelium is a fine basement membrane, and these two cover certain important structures—the *villi* or *papillæ*. These are described by Dr. Tyler Smith as long, single, or bifurcated, vascular bodies, sometimes so large as to be visible to the naked eye. They are rendered evident by macerating the cervix uteri in water, when, the epithelial covering becoming detached, the villi are seen forming an irregular fringe over the whole surface. *Within the cervix* there are also villi of a somewhat analogous character, but not bound down and hidden by epithelium, as in the other position, and the villi are three or four times larger; they contain in both situations looped blood-vessels. The interior of the cervix further differs from the labia of the os uteri, in being provided with an enormous number of mucous crypts capable of pouring out secretion in large quantity, whereas there appears to be an almost entire absence of these glandular organs in the mucous membrane covering the labia.

Thus, if the whole of the epithelial covering were removed from the surface of the labia of the os uteri there would be presented to the eye a bright red, somewhat irregular, surface constituted by the free extremities of the villi in question. An appearance somewhat similar to this is normally presented, in the cavity of the cervix, by the villi there situate, but in the latter position

the surface is more irregular, due to the larger size of the villi, and of a deeper red, owing to their greater vascularity.

Such is the anatomy of the surfaces of the os and cervix uteri brought into view by means of the speculum. We are now in a position to consider the diagnosis of the pathological conditions which these surfaces may present.

The pathological condition of the surface of the os and cervix uteri, to which attention has been very much directed, is 'ulceration,' as it is termed. Almost every variety of change observed has been termed 'ulceration,' and it is for this reason necessary to endeavour to arrive at some clear and definite ideas on this subject.

In the first place it appears that the mistake has often been committed of mistaking for an ulcer a simple *eversion of the lining of the cervix*. Dr. Farre * has pointed out this source of fallacy. His remarks on the subject are as follows:—'In the more common degree of hypertrophy with eversion, a crescentic protrusion only of the cervical lining occurs. The unevenness of the surface caused by the slightly swollen and prominent rugæ, and as often by the numerous little depressions consisting of enlarged mucous crypts, according as one or the other of these is the predominant normal structure in the cervix, gives to the part during life the appearance of a raw and granular surface, while the natural boundary between the lower edges of the cervical canal and the lips of the os tinæ being now transferred on to the latter, in consequence of this eversion, an abrupt semicircular line becomes visible, which while it only indicates the natural termination here of the vaginal epithelium is frequently mistaken for the margin of an ulcer' (p. 694). The stretching of the parts, which is sometimes produced by the mere introduction of the speculum, may give rise to this kind of eversion of the lining of the cervix, whenever the os uteri is a little lax and soft and slightly open. The observer only requires to be warned of the error here alluded to, in order not to fall into it; by simply moving the speculum a little it will easily be made evident whether the dark or circumscribed spot be the everted lining of the cervix or not.

The word 'ulceration,' as applied to certain conditions of the os and cervix uteri, has itself given rise to very much dispute and contention. By some pathologists it is stated that nothing is more common than 'ulceration' in this locality; by others this frequent presence of 'ulceration' is as strenuously denied. It is

* *Cycl. Anat. and Phys.*, article 'Uterus.'

not difficult to perceive that those ~~who~~ make these opposing statements as to the presence of ulceration are not even agreed as to the meaning to be attached to the word 'ulceration,' and this being the case it is not to be expected that there should be agreement in other particulars.

Conditions of the Lining of the Cervix to which the term 'Ulceration' has been applied.—Dr. Arthur Farre, whose authority in matters connected with the pathology of the uterus is undoubted, remarks on this subject that many of the appearances and conditions of the uterine cervix to which the term ulceration has been applied 'when minutely examined and tested by the aid of 'the microscope, so little fulfil the conditions of true ulceration as 'to make it appear that such a term could only have been applied 'to them under, in some instances perhaps, a misapprehended, 'and in others a strained view of their real nature.'* Dr. Farre proposes, with the view of preventing further misconception on the subject, to adopt Mr. Paget's suggestion of 'regarding as abrasions 'or excoriations those conditions in which the epithelium or epidermis of an inflamed part is alone removed, and those only as 'ulcerations in which the removal extends further to the vascular 'or proper tissues beneath the epidermis.'†

Dr. Henry Bennet, who contends for the frequency of ulceration, appears to draw his conclusions as to the presence of 'ulceration' chiefly from the nature of the secretion of the affected surface. Dr. Bennet admits that the particular physical condition of the surface itself, usually considered as indicative of ulceration, viz., excavation, is wanting, and further that the margin is never abruptly indurated. In fact, 'ulceration,' taking Dr. Bennet's view of the question, means a condition of the surface of the mucous membrane associated with secretion of what is termed by him 'muco-pus.'

In weighing the reasons for and against the opposing views on this subject, it must be recollected that the particular surface about which there has been so much dispute, under *ordinary* circumstances secretes a mucous fluid: it is not like the skin. If a portion of the skin of the arm, for instance, were the seat of a purulent secretion, such a purulent secretion would be a sign of ulceration—of breach of surface; but it is not necessarily so with the surface of the os and interior of the cervix uteri; the difficulty of distinguishing between mucus and pus is well known:

* *Loc. cit.* p. 695.

† *Ibid.* p. 696.

normally a secretion is poured out from the glands lining the cervix, which, mixed with the vaginal mucus, assumes a physical appearance very like that of pus, and it can hardly be admitted that the presence of muco-pus is indicative of ulceration in the ordinary sense of the word. Again, if 'purulent' discharge be the indication of the presence of ulceration, it might be expected that a certain degree of ulceration would be attended with a corresponding quantity of purulent discharge. Dr. Bennet states that 'the patient may suffer from decided ulceration, and yet have no 'recognised vaginal discharge.'* This fact, damaging to the validity of Dr. Bennet's views, he explains by supposing that the secretion is absorbed in the vagina; an explanation not altogether satisfactory. The condition of the interior of the cervix which Dr. Bennet terms 'inflammatory ulceration,' Dr. Farre describes as inflammation, thickening and hypertrophy of the papillæ, follicles and rugæ of the cervical canal. It is evident that the condition described by the latter author is to all intents and purposes the same with that to which Dr. Bennet applies the term 'ulceration.'

Again, it has been maintained by some observers that ulcerations of the cervix uteri, of the 'fungous' variety, occur frequently during the early months of pregnancy, and often give rise to serious consequences. More extended observation has shown, however, that ulceration, or the condition described as such, of the cervix is to be regarded as a normal condition. Cazeaux† describes the appearances during the latter half (and his description agrees in essential particulars with that given by others during the first half) of pregnancy as follows:—'The walls of the cervical cavity are very unequal and present an irregular series of fungous projections separated by more or less deep depressions. Some of these prominences are transparent, being probably due to hypertrophied follicles, but others resemble true flabby vegetations. Sometimes these are covered by a protective epithelium, but it is not unusual for them to be deprived of this, and then, to bleed on the slightest touch. It is especially within the furrows which separate them that more or less deep linear ulcerations are often observed. These ulcerations sometimes so increase in size as to occupy a pretty considerable surface, and then they are easily seen; but generally they are hidden in the depths of the anfractuositities, and in order to perceive them, after well cleaning the

* *Opus cit.* 4th ed. p. 85.

† See *Mém. de la Société de Chirurgie de Paris*, t. iv.; also *Brit. and For. Med.-Chir. Rev.*, July 1858, p. 136.

surface, we must put the cervix on the stretch by opening the instrument widely.' Cazeaux has observed such 'ulcerations' in seven-eighths of the cases he has examined. In a case of Fallopian pregnancy, fatal at two months of gestation, which recently came under my notice, the hypertrophied fungous condition of the villi at the os uteri was very evident; the symmetrical and indeed beautiful appearance of the villi in question gave the idea of a physiological and not a pathological alteration of the parts in question.

These latter facts are of the greatest possible importance in reference to the general question of what constitutes 'ulceration' of the os and cervix uteri. It cannot be doubted that the mucous lining of the cervix and of the os is liable on slight provocation, so to speak, to take on changes of the kind which have just been described; if we admit that these are cases of 'ulceration,' then it is easy to admit also that ulceration is of frequent occurrence. It is not easy to conceive, however, that changes which, by whatever name they be called, may be at all events associated with perfect health on the part of the individual, the subject of them can be *justly* designated by such a term as 'ulceration,' a term in itself conveying to most minds peculiar ideas as regards the importance and gravity of the changes in question.

Thus far, we have been speaking of the mucous membrane lining the cervix; the alterations which may be witnessed in the mucous membrane covering the *vaginal part of the cervix uteri*, and to which the term 'ulcerations' have also been freely applied, require next to be mentioned.

EROSION, EXCORIATION, OR ULCERATION OF THE OS UTERI.

One class of cases is that in which the epithelium, covering the os uteri, and adjacent part of the cervix, is loosened and detached, leaving exposed the villi of the mucous membrane. The surface has a more or less bright red appearance, and is soft and velvety to the touch. When nitrate of silver is applied, the distinction between the abraded and the healthy surface is rendered very evident. It is accompanied generally by an unusual secretion from the glands of the cervix, and by a full congested, or if the word be preferred, inflammatory condition of the mucous membrane, and frequently of the tissues of the part generally. This abrasion is considered by Dr. Tyler Smith to be dependent on the corrosive properties of the secretion brought into contact with the surface.

Several varieties of erosions have been described by authors; thus an *aphthous* form is alluded to, in which the epithelium is raised in the form of little vesiculæ or bladders; other forms have been spoken of, and distinguished by names according to their fancied resemblance to eruptions on the skin. The various appearances presented would seem to be due rather to accidental circumstances than to fundamental differences.

Cases in which there is simply abrasion may be observed; but in many instances there is something more than loss of epithelium; the surface has in these cases an eaten, corroded appearance, due to the fact of 'the loss or partial destruction of the villi' (Tyler Smith). The destruction of surface may be so trifling that it requires care to discover it, or it may be much more considerable, giving the surface an appearance of real ulceration. When the surface has been abraded for some time, it assumes a more or less *granular* appearance, and this is evident both to the eye and to the touch; and the greater part or the whole of the os uteri may in certain cases present a raw rough surface of a bright red or livid and bluish colour. This condition of the surface may not improperly be spoken of as 'ulceration.'

Further, the exposed surface is apt, in chronic cases for the most part, to assume a *fungous* appearance, that is to say, the papillæ in certain situations become hypertrophied, and form minute elevations distinguished by their brighter red colour from the adjacent parts. More rarely the hypertrophy is in certain parts greater in degree, and *livid-red excrescences* $1\frac{1}{2}$ to $2\frac{1}{2}$ lines in height, according to Scanzoni, are observed round the os uteri. These latter are very vascular and bleed easily. Such appearances are generally associated with the hypertrophied condition of the villi lining the cervical canal previously described.

The appearances presented by the os and cervix uteri vary according to the condition of the general health. Mr. Robert Ellis, who applies the word 'ulceration' in the manner above objected to, describing various 'phases of the uterine ulcer,'* uses a classification indicating the peculiar constitutional state under which such and such forms of 'ulceration' occur. Thus he describes: 1. a 'diphtheritic' ulcer; 2. a fungous ulcer dependent on fatty degeneration with arrest of involution of the uterus after delivery; 3. an 'inflammatory' ulcer, requiring leeches, rest and anti-inflammatory treatment of various kinds; 4. an 'indolent'

* *Lancet*, vol. ii. 1861.

ulcer, very common, and requiring, so far as constitutional treatment is concerned, stimulants and tonics; 5. the 'senile' ulcer, an intractable, often small ulcer, occasioning much sympathetic disturbance.

True ulcerations of the vaginal portion of the cervix uteri are sometimes met with. They are generally associated with enlargement and hypertrophy of the cervix uteri, whatever may be the cause of that enlargement; or with those affections of the uterus usually classed under the term 'prolapsus uteri.' They are apparently produced by the mechanical irritation to which the cervix is exposed, and have all the characters of ordinary ulcerations.

Another form of ulceration of the os and cervix uteri, which is rare, is by some authors believed to be of cancerous nature, by others to be of *tuberculous* nature. Dr. West, in whose work * will be found a careful résumé of what has been said by different authorities on the subject, believes that these intractable ulcerations are instances of epithelial carcinoma; and he agrees with Robin in considering that this kind of ulcer is to the uterus what lupus or cancrroid ulcers are to the face. There appears to be no reason, however, why both sides should not be right, or for denying that both tuberculous ulcers of chronic nature, and lupoid disease of the cervix uteri may be witnessed, though not of course in the same individual. It can very rarely happen that this question will arise practically for determination, these intractable ulcerations being very uncommon (see also p. 256).

SYPHILITIC AFFECTIONS, ULCERATIONS &C., OF THE OS AND CERVIX UTERI.

Concerning true chancre—primary syphilitic ulcer—of this part, there is but little difference of opinion. It is pretty well understood that it is very rare, although it has been observed. Chancre of the os or cervix uteri presents an appearance like that of chancre observed elsewhere; it is said that there is a greater disposition on the part of the ulcers here situated to bleed. The only conclusive evidence of the nature of the ulcer would be its reproduction by inoculation.

Respecting *secondary syphilitic* eruption, or ulceration of the os and cervix, there has been much discussion, nor is it at all settled how frequently ulceration is present in individuals affected with secondary syphilis. It does not appear that there is any-

thing peculiar about the character of the ulcerations present in these cases, or which would enable us to say at once that such and such an appearance was due to syphilis. Dr. Tyler Smith, whose arguments appear to carry very much weight, holds that 'in almost all cases in which leucorrhœa and disease of the os and cervix uteri are present in women suffering from constitutional syphilis, the uterine symptoms are a genuine manifestation of the constitutional or secondary disorders.'* And this author considers that a large proportion of the cases described by Drs. Bennet and Whitehead as cases of idiopathic inflammation and ulceration of the os and cervix were really cases of this kind.

The diagnosis of secondary syphilitic ulceration of the os and cervix will be materially influenced by the presence or absence of a syphilitic history in the particular case, and before proceeding to form a decision on the point, all the antecedents of the patient must be carefully scrutinised. The effect of anti-syphilitic remedies would frequently assist us in coming to a conclusion.

We may in the next place consider the anatomy and pathology of the *substance of the cervix uteri*. In endeavouring to estimate at their true value in relation to the pathology of uterine affections, the appearances presented to the eye by means of the speculum, certain considerations of a purely anatomical nature appear to have been too little insisted upon. The vaginal part of the cervix uteri—the part which is brought into view by means of the speculum—is only a portion of that large segment of the uterus comprised under the term 'cervix.' The structure of the cervix, in the extended sense of the term, appears to be identical throughout, and the cervix forms a canal, serving as a communication between the vagina and the uterus proper. It is reasonable to suppose that any change affecting the tissue of the vaginal portion of the cervix will be participated in by the supra-vaginal part of the cervix; from which it follows that inflammation, engorgement, swelling, or congestion, of the *vaginal* portion, implies for the most part a corresponding condition of the remaining less accessible portion of the cervix. In the next place, the canal of the cervix presents glands of the same kind throughout, these glands being exceedingly numerous, and capable, under certain circumstances, of secreting an enormous quantity of mucus. We are unable, under ordinary circumstances, to view more than a small part of this large secreting surface; and when

* *On Leucorrhœa*, p. 98.

a discharge is seen issuing from the surface of the lower part of the canal, this almost necessarily implies that at the same moment the whole canal is secreting in pretty nearly the same degree. Correspondingly, a certain condition of the villi of the mucous membrane at the os uteri being present, it is not unreasonable to conclude that the villi of the mucous membrane situated higher up are affected in like manner.

The *tissue* of the cervix itself is made up of elements resembling those of the body of the uterus, that is to say, of fusiform fibre cells—involuntary muscular fibres—intermixed with bundles of fibres of white fibrous tissue, together with a copious supply of blood-vessels, &c. The chief structural distinction between the cervix and the body of the uterus lies in the fact that the connective tissue exists in much larger quantity in the cervix than in the body of the uterus, and that it is of a stronger and tougher kind.* Further, there is the peculiarity that a certain and by no means inconsiderable portion of the thickness of the cervix is composed of a layer of glands known as the glands of the cervix. To the existence of these latter considerable importance must be attached in reference to the present enquiry. The fact that the tissue of the cervix is chiefly composed of involuntary muscular fibres has a very important signification in reference to the nature of the conditions spoken of by authors as *inflammatory enlargement*, *induration*, *chronic hypertrophy*, &c., of the cervix uteri. It is well known that the anatomical element in question has a remarkable peculiarity; under the action of certain stimuli, also in their absence, very frequently, it grows and enlarges, the result being that the whole organ, or a part of the organ, becomes larger. Thus it is that the uterus grows during pregnancy, thus it is that its walls become thicker under a variety of other circumstances. Hence, given an irritation, it is easy to see how increase in the size and thickness of the cervix uteri may be produced simply by the inordinate activity and growth of the part. The term ‘inflammatory,’ as applied to the enlargement in question, although, perhaps, the best which, in the present state of knowledge, is available, appears imperfectly to represent the condition of things actually present.

The substance of the cervix is well supplied with blood-vessels. It has been shown by Rouget (see p. 123) that externally to the cervix and the body of the uterus there exists a vast net-

* See Farre, *loc. cit.* p. 638.

work or plexus of arteries and veins, in virtue of the presence of which the uterus is an erectile organ. That the lower part of the uterus, which is within the reach of digital exploration, does become temporarily increased in size, the size rapidly diminishing within a very short time, I have been long convinced by observation, and in Rouget's anatomical facts we find the explanation of the circumstance. This is interesting in relation to the question of the nature of enlargements of the cervix.

The *glandular* element in the cervix uteri is one of considerable importance. The glands of the cervix uteri are the source of the discharge in most cases, of profuse leucorrhœa, and under certain circumstances they pour out a very considerable secretion. Normally, the secretion in question is a thick, viscid, transparent mucus, and when the generative organs are, so to speak, in a state of rest, the quantity of the secretion is probably not considerable.

In the next place it must be recollected that the secretion of the glands of the cervix may alter in physical characters, that alteration being due to accidental, or at all events non-pathological causes. Thus it is reasonable to suppose that, like the mucous secretion from other surfaces of the body, it is liable to fluctuations in regard to the proportion of fluid and solid constituents. Such variation is witnessed in the secretion of the nasal passages, in the case of a 'cold in the head,' as it is termed. This apt comparison is Dr. Bennet's.

As stated in another place, the cervical secretion becomes altered in its physical characters by admixture with the mucus secreted by the vagina, the result being the production of a fluid which may be creamy, or puriform, opaque, or more or less transparent, according to varieties in the quantities of the secretions from the two surfaces, both positively and relatively.

A considerable proportion of the abnormal (and not a few of the normal) conditions presented to our view, by means of the speculum, have been set down as due to *ulceration*. The bearings of the question as to 'ulceration' have been already considered. We have now to consider the relation which subsists as cause and effect between *inflammation* and the various conditions liable to be presented by the os and cervix uteri. 'Inflammation' and 'ulceration' are the two pathological elements to which so much importance has been attributed; the greater part of the lesions and diseases of the uterus are connected, according to Dr. Bennet, with inflammation of the uterus, and specially with inflammation of that part of the uterus known as the cervix; and hence the

necessity for carefully examining this question as to inflammation of the cervix and os uteri, its pathological relations, its frequency, and its importance. Inflammation of the os and cervix uteri is held by Dr. Bennet to be the cause of the various morbid appearances, discharges, &c., there presented. 'Inflammation of the uterus,' is a term which cannot however be used without some statement as to the meaning which is intended to be conveyed by it. Inflammation of the uterus, going on to the formation of abscess, is one of the rarest events possible, but this organ appears liable to be affected with a morbid chronic nutritive activity (want of activity it may be termed in some cases) of its substance, associated with production of discharges, presence of pain, presence of vascularity, increase in size, &c. The tissues of the cervix uteri, and more especially the os uteri, present these changes in very many cases, and it is hardly possible to consider them as anything but 'inflammatory,' although the term may fail frequently to convey an adequate idea of the condition of the parts. There is frequently nothing more than simple congestion present in these cases; added to this, and intensifying it, we may have the sort of erection of the part previously alluded to. But this congestion, when it has lasted for any considerable time, passes into a condition of chronic activity of the secreting structures of the part, of morbid vascularity, &c., conditions for which no other term but 'chronic inflammation' seems appropriate. The hypertrophy of the villi (described erroneously as ulceration), and hypertrophy of the tissues generally, which may be witnessed in all degrees and of all kinds, are further results.

In the first stage of 'inflammation' of the kind now under consideration, we find the os uteri open, larger than usual, the lips swollen, usually soft, and a copious secretion proceeding from the cervical canal. The congestion present shows itself, as would be expected, most prominently in the mucous membrane itself, hence the large size which the papillæ acquire, the fungiform appearance they are liable to assume, and the increase in the secretion poured out from the entire mucous surface.

The causes which give rise to the abnormal condition of the os and cervix uteri now under consideration are manifold. It is more liable to occur in women who have had children; and repeated pregnancies not unfrequently leave behind a loose, large, atonic, condition of the whole uterus, in which the cervix and os uteri necessarily participate, and this condition is associated also not rarely with a congested state of all the pelvic organs. Thus

'defective involution of uterus,' after delivery, plays a very important part in relation to chronic inflammation. It appears more correct to look on the chronic inflammation rather as an effect than a cause of the defective involution.

In another class of cases, in addition to the characters described, the lips of the os uteri are indurated, as well as enlarged, the enlargement being itself more considerable than in the class of cases just alluded to. The hypertrophy now under consideration must not be confounded with that condition in which the cervix is *elongated*, and which is of a different nature. The size of the os is here increased, the finger passes in readily, there is a more or less copious secretion, the lips of the os are very frequently split up, so to speak, into rounded elevations, between which are deep fissures. The elevations themselves are hard, firm, pretty uniform in density, and the vaginal portion of the cervix uteri may thus attain a very considerable size. This condition is met with in women who have had children, and who have been under the same etiological conditions as those included in the last series of cases. The fissures result from slight lacerations occurring during parturition, which, originally perhaps very slight in degree, become magnified, owing to the increase in size of the lips of the os. Respecting the condition of the tissues of the os uteri here present it has already been stated that the bulk of the enlarged labia is composed, not so much of inflammatory products as of actual hypertrophy and increase of the normal tissues of the part. The hardness presented by the lips of the os under such circumstances is often very remarkable (see 'Digital Examination of the Os Uteri'), and such as to excite in the mind of the inexperienced observer a suspicion of the affection being cancerous. The body of the uterus is often affected in the same way in these cases. Erosions and ulcerations may be observed in connection with the affection. Slight exudations of blood often take place from the surface of the hypertrophied mucous membrane, and the discharge as it appears at the vaginal outlet is consequently sometimes of a sanious character.

APPEARANCES PRESENTED IN CANCEROUS AFFECTIONS OF THE OS AND CERVIX UTERI.

It is necessary here to say a few words as to the appearance of the surface presented when cancer is present, although, as has already been remarked, we have rarely occasion to use the speculum for the purposes of diagnosis in cases of uterine cancer.

But little advantage can be derived from the use of the

speculum in cases of advanced cancer of the uterus, the diagnosis of which, by the aid of digital examination alone, is not usually attended with difficulty; and, unless used with great care, the use of the speculum may, under such circumstances, occasion hæmorrhage, and produce mischief of other kinds.

When, however, the os uteri is found on digital examination to be indurated, irregular, and when there is doubt as to whether cancer in its first stage may or may not be present, the use of the speculum may be the means of resolving that doubt. The physical condition of the os and cervix uteri, as felt by the finger, in the early stage of cancer, has been already fully described; it only now remains to give an account of the appearances presented to the sight in such cases.

Respecting the *colour* of the surface in induration due to cancer, there is a difference of opinion; and this arises from the fact that the first stage of cancer of the uterus so very rarely comes under observation. Supposing cancer to be present, and the ulceration to have only just commenced, the ulcer will be found to have peculiar characters: it is excavated and depressed below the surface, the edges irregular, jagged and somewhat tumid, and sharply defined. In chancre, the ulcer is distinguished by its being more superficial, by the absence of enlargement and induration of the tissues beneath and around, by the absence of general signs of cancer, and by the effects of anti-syphilitic treatment.

Judging by ocular inspection alone, there are undoubtedly cases in which difficulty might occur in deciding between cancerous ulceration and ulceration due to other causes; but it cannot be too frequently repeated that it is by combination and comparison of the general and particular data that a diagnosis must be arrived at. In the case of suspected cancer, more will be learnt from digital examination than by the most careful use of the speculum.

The appearances presented by the os in cases of *cauliflower excrescence of the os uteri* are described by Sir C. M. Clarke as follows:—‘There is a striking resemblance between itself and a portion of the upper surface of a cauliflower or a head of brocoli. The surface is granulated, and it consists of a great number of small projections, which may be picked off from the surface as the granules may be detached from the vegetable.’ The surface, as seen by the aid of the speculum or otherwise, is of a bright red colour. It is very delicate, and the least touch sometimes suffices to make it bleed. Hence, if the speculum be used, great care must be exercised not to injure the surface. A digital examination

affords more information respecting the nature of the growth than can be obtained in any other way.

IMPORTANCE OF LESIONS OF THE OS AND CERVIX UTERI.

We have hitherto considered the pathological alterations of the os and cervix uteri in relation simply to the actual nature and form of those alterations, and the questions which have been discussed have had reference, for the most part, to facts.

But there is another point of view, also having reference to the question of diagnosis, from which it is necessary to regard these alterations observed in the os and cervix uteri—viz. their importance in relation to the diseases of the uterus generally.

I cannot agree with Dr. Bennet in assigning a super-eminent importance to affections of the cervix uteri, or in considering that alterations of this particular part of the uterus are capable of exercising that profound influence on the patient generally which has been attributed to them. It has been over and over again matter of observation that the cervix uteri may be materially altered in regard to its size, shape, and physical relations, and yet the individual the subject of such changes may enjoy apparent perfect health. And this want of correspondence between alterations and symptoms, although not perhaps conclusive as against the theory, which magnifies the importance of ailments of the cervix uteri, is certainly hardly reconcilable with it.

Again, if we take any one of those particular alterations of the os and cervix uteri, the importance of which has been so much insisted on—ulceration, for instance—and examine clinically how far the presence of this ulceration coincides with the presence of important symptoms, it is found that there is an absence of satisfactory proof of the connection insisted on. Dr. West has devoted considerable time and patience to a special enquiry on this subject, the results of which were laid before the profession some years since.* Dr. West found that ‘women of the same age, in similar circumstances, present the same symptoms, leading to the same results, having the same duration, and attended with similar structural changes, whether ulceration of the os uteri is present or absent;’ from which ‘it may be fairly inferred that ulceration of the womb is neither a general cause of uterine disease nor a trustworthy index of its progress.’†

And with reference to the alleged connection between ‘ulceration’ and ‘induration,’ Dr. West found that, while the two were not

* *On the Pathological Importance of Ulceration of the Os Uteri.* 8vo. Lond. 1854.

† *On Diseases of Women*, p. 123.

unfrequently associated, the circumstances were such as not to lead to the inference that the relation of the former to the latter condition was one of cause and effect; for in numerous instances an indurated cervix coexisted with a healthy os uteri, and while in many cases, the induration being great, the ulceration was limited, in other instances the ulceration was very extensive, induration being entirely absent.

The observations made in the early part of this chapter on conditions mistaken for 'ulceration,' may be referred to as bearing on the subject now under discussion.

It may be quite true that in most cases of confirmed uterine suffering some one or more of those physical changes which are described as constituted by 'inflammation and ulceration' may be found on examination by means of the speculum to be present. But this is no proof that there is any necessary connection between the two things, and facts go to prove that these appearances *may* be present without the coexistence of 'confirmed uterine suffering.' It is not meant to insinuate that these local changes have no importance, or that they are to be disregarded, but this is very different from giving them the first place. It appears that there are few uterine diseases or affections of any considerable duration which do not, directly or indirectly, produce some alteration in the os and cervix uteri: this is an almost inevitable consequence of the relation of this part of the organ to the uterus generally. On the other hand, there do now and then occur cases in which the affection of the cervix uteri which is present assumes an importance, in relation to the symptoms then and there observed, of the kind represented by Dr. Bennet. There *is* a chronic diseased condition of the cervix which cannot but be regarded as the condition with which the patient's sufferings are for the most part connected. But, in proportion to other morbid conditions coming before us and calling for treatment, such cases are exceedingly rare. That disease of the cervix may give rise to confirmed uterine suffering it is impossible to deny; but there do not appear to be sufficient grounds for the belief that disease of the cervix is the thing which is to be regarded as dominant in uterine pathology.

It is therefore not sufficient, in any case of chronic uterine affection coming before us, simply to make an examination by means of the speculum, and to direct our attention only to the removal of the disordered conditions of the os thereby detected. Certain morbid conditions of the body of the uterus proper—a part of the

organ lying altogether out of the reach of ordinary visual examination—may be the cause of the distressing symptoms presented by the patient; and although it may be proper to remove or remedy the disorder of the os and cervix, it is no less incumbent on us to devote, at the least, some attention to the disease, displacement, or other altered condition of the body of the uterus. It cannot be doubted that important morbid conditions, unrecognisable by the speculum, have not unfrequently long escaped detection, simply owing to the fact that the examination has been limited to the use of this instrument.

CHAPTER VIII.

EXAMINATION OF THE ABDOMEN : GENERAL REMARKS ON THE DIAGNOSIS OF THE CAUSES OF ENLARGEMENT OF THE ABDOMEN.

The Methods of Examination—Position of the Patient during Examination.

ENLARGEMENT OF THE ABDOMEN.—Results obtained by Inspection as to Diagnosis of Nature of Enlargement—Results obtained by Palpation ; Discovery of a Tumour—Results of Percussion ; Distinction between Gaseous and Fluid Distension ; Fluctuation Test—Presence of a Tumour doubtful—Obscurity produced by Fatty Condition of Abdomen.

THE diagnostic data obtainable by examination of the abdomen require a very careful attention and consideration. The several conditions made known to the senses by the various methods of examination of the abdomen which are at our disposal will now be considered, and their diagnostic value pointed out.

For clinical purposes, it is usual to divide the abdominal surface as follows:—The portion of the abdomen above a horizontal plane passing through the anterior extremities of the tenth rib on either side, is the *epigastric region*, the lateral portions of which are the *right and left hypochondria*. The *umbilical region* is bounded above by the lower limit of the epigastric region, and below by a line passing between the anterior superior spinous processes of the iliac bones on either side. The *hypogastric region* comprises that portion of the abdomen situated below the line last mentioned. The inferior boundaries of this region are the ossa pubis, and Poupart's ligament on each side.

The *methods* of examination which we employ in investigating the condition of the abdomen are—1. *Inspection*, by which we are made cognisant of the size and shape of the abdomen, the condition of the integuments covering it, &c. Measurement of the abdomen belongs to this division of the subject. 2. *Palpation*, by means of which we ascertain the presence of varying degrees of resistance, hardness, softness, and the like, of the abdomen generally, or of different parts of the same, and are thus enabled to

correct erroneous impressions conveyed by inspection alone. Under this head is included *fluctuation*, a physical sign of the presence of fluid. 3. *Percussion*, by the assistance of which we are able to distinguish between tumours or enlargements depending on the presence of solid bodies, and distension by air or fluid. 4. *Auscultation*, in which the sense of hearing is employed for the detection of certain sounds. 5. A combined vaginal and abdominal examination by means of palpation over the hypogastric region, while the finger of the other hand is within the vagina, or with the uterine sound within the uterus. In the diagnosis of pelvic tumours of doubtful nature, this combined examination is often of the greatest possible service.

It is hardly necessary to state that all these methods of examination are not employed in all cases. Inspection, palpation, and percussion, combined, are the methods of examination most commonly employed, and most generally serviceable in enabling us to form the necessary diagnosis. Frequently they prove insufficient, and in a few cases we find in the employment of auscultation a means of arriving at a conclusion which other methods do not afford. In forming the diagnosis, too, it is quite impossible to omit from the consideration the facts relating to the history of the case before us: the physical examination without a knowledge of the history of the case, and the history of the case without the physical examination, would in most cases be equally valueless.

The most common case in which a diagnosis is required is that in which the abdomen is enlarged, and it is required to determine the nature and cause of the enlargement. The causes of abdominal enlargement are, it is hardly necessary to remark, very numerous, and the possession of readiness in their diagnosis and discrimination implies the possession of no small amount of knowledge of the pathology and history of abdominal diseases. In endeavouring to ascertain the cause of the enlargement of the abdomen presented by the patient before us, our enquiry must be of a somewhat extensive character. That enlargement may depend on a morbid or altered condition of some one of the generative organs, or it may not; and in order that we may not fall into error, it is necessary to start with no preconceived view of the case. Where this preconceived view is thrust upon us, by the expressed convictions of the patient or other circumstances, it is important that our mental training be such as to allow of its being kept in the background as much as possible until reliable data for diagnosis have been obtained, and our enquiries have been made to

cover possible sources of fallacy. The primary principle should be, to take nothing for granted, to know for ourselves, and not to accept anything as reliable which only comes to us second-hand.

Position of the Patient during the Examination of the Abdomen.

—The patient should be placed, lying on the back, on a firm unyielding couch or bed, the shoulders somewhat elevated, the knees a little drawn up so as to relax the abdominal parietes; the whole body should be in a state of absolute repose. It is sometimes desirable to engage the patient in conversation, in order to prevent a kind of involuntary contraction of the recti muscles, which is often present, and which interferes materially with the attainment of the object desired.

It is unnecessary to entirely uncover the skin of the abdomen in order to examine the abdomen by palpation. If, however, auscultation is to be practised, the stethoscope must be applied to the skin, or fallacies are likely to arise. In many cases, an inspection of the skin itself is desirable. It is best, however, to commence the examination without entirely uncovering the abdomen, and to obtain thus a general idea as to the shape and size of the same, the presence of tumour, and the like. Lastly, before undertaking a regular examination of the abdomen, the contents of the rectum and of the bladder should be evacuated.

ENLARGEMENT OF THE ABDOMEN: THE ELEMENTARY DIAGNOSIS OF ITS NATURE.

The first question to be determined in a case of supposed abdominal enlargement should be—

Is the enlargement real, or only apparent, or assumed for purposes of deception?—It is a fact that some patients, desirous of being thought pregnant, or for other reasons wishing to impose upon us, can acquire the power of projecting the abdomen forwards, so as to simulate the enlargement due to pregnancy. This arching of the abdomen is effected by sharply bending the vertebral column in the lumbar region; and when patients presenting this factitious enlargement are made to lie down, on placing the hand over the centre of the loins a corresponding hollow is felt there. In a case which came under my own observation, the patient, a young woman about 25 years of age, had been supposed to have an abdominal tumour. On a casual examination, the appearance and general form of the abdomen were strongly corroborative of this supposition; but no tumour could be detected, no resistance was

anywhere felt, and the tympanitic sound, on percussion, was decisive as to the correctness of this negative view of the case. The nurse in attendance directed my attention to the condition of the back, and it was then found that the patient was affected with angular, and also very slight lateral, curvature of the spine in the lumbar region, the consequence of an injury received a few years before. Here the arching of the abdomen was real, but there was no enlargement of the abdomen in the true sense of the word. Then there is a remarkable class of cases in which the abdomen is enlarged, the patient believes she is pregnant, and endeavours to persuade others that this is the case. The use of chloroform as an aid to diagnosis in these cases was first recommended by Dr. Simpson, the discoverer of this invaluable therapeutic agent. A case related by Dr. Simpson will best illustrate this application of chloroform:—A patient had been, according to her own account, thirteen months pregnant, and there were arching and apparent enlargement of the abdomen. By the aid of chloroform, given tolerably freely, the arching disappeared, the abdomen became flattened, and the sister of the patient was made to convince herself, by touching the vertebral column through the abdominal parietes, now lax and non-resistant, of the utter impossibility of a foetus being contained in the abdominal cavity.* This subject will again engage attention farther on.

Having determined that the abdomen is actually enlarged, our next step is to endeavour to obtain some general idea as to its cause and nature.

RESULTS OF INSPECTION.

Size of the Abdomen.—From the mere element of size alone there is not anything very positive to be deduced. It may, however, be stated, that the most common causes of extreme persistent enlargement of the abdomen in women are ovarian dropsy and ascites.

As regards the *shape of the abdomen* in cases of abdominal enlargement, there is not very much of a conclusive character to be stated. If the enlargement be *symmetrical*, affecting the two sides of the abdomen equally, this is in favour of the presence of ascites or tympanitic distension of the intestines; but, on the other hand, a want of symmetry is usually observed when the enlargement is due to the presence of a tumour, as in cases of ovarian dropsy (generally), fibrous tumour or polypus of the uterus, enlargement and tumour of the liver or spleen, &c. To this general

* *Med. Times and Gaz.* 1859, vol. ii. p. 250.

statement there are many exceptions. Thus, in large simple cyst of the ovary, the abdomen is often symmetrically enlarged at an advanced period of the disease. Similarly, ascites, when associated with tumours of the abdomen, often produces, superficially at least, a symmetry in the appearance of the abdomen on the two sides.

When we have to distinguish between ascites and ovarian dropsy, there is a point in reference to the shape of the abdomen which is of assistance, and it is this:—that, whereas in cases of ovarian dropsy the enlargement is rounded anteriorly whatever be the position of the patient, in cases of ascites the anterior surface becomes flattened when the patient is laid on the back. This distinction, however, may fail us when, as is sometimes the case, the distension of the abdomen from ascites is considerable in degree.

RESULTS OBTAINED BY PALPATION.

These are most important. The position of the patient before enjoined is necessary for carrying out this mode of examination. The hand is to be spread out flat, so as to bring as much of the palmar surface of the fingers into contact with the abdominal wall as possible. Pressure, slight at first and gradually increased in force, is to be then made over the whole of the abdominal surface, beginning with the hypogastric region, the general direction of the pressure being towards the vertebral column. One or both hands may be employed in this operation. It is important that the pressure made be at first slight in degree; otherwise contractions of the muscles are produced, and the attempt of the operator will be defeated. Normally, the abdomen offers no resistance to the pressure of the fingers (the patient being placed as above directed), save that produced by spasmodic and involuntary, or intentional contraction of the recti muscles; everywhere the fingers are allowed to sink inwards to a considerable depth, and it is usually possible to touch the vertebral column posteriorly.

Discovery of a Tumour.—Our first object in exercising palpation should be to ascertain whether the distension of the abdomen which is observed be due to a tumour within the abdomen of a solid nature. If the abdomen be only moderately distended, and the fingers can be made to sink inwards equally at all points, whether above or below, but especially below, without encountering a hard resistant body, we may pretty confidently predict that no solid tumour is present. When the abdomen is largely distended, however, the case is different; the fingers may in some such cases be made to

sink inwards to a considerable depth without encountering a solid resisting body, while such a one is nevertheless present. This now and then happens when the abdomen contains a solid ovarian tumour together with a large amount of ascitic effusion.

The difficulty arising from rigidity of the recti muscles has next to be dealt with. Women desiring to frustrate the purpose of the examiner, and to disguise the presence of a uterine tumour, occasionally have recourse to the expedient of contracting these muscles. The practitioner will generally be able to procure the relaxation necessary, by engaging the patient in conversation—in extreme cases by giving chloroform, as mentioned above. The same kind of difficulty is sometimes met with when the patient has no such object in view, and when the contraction is purely involuntary. Such cases are extremely perplexing, as will be explained farther on; contraction of the recti muscles may actually simulate the presence of a tumour. In cases of suspected pregnancy, the recognition of the presence of a tumour is of extreme importance; in many instances, the discovery of the presence or absence of a tumour in the abdomen is the point on which the whole question turns; the reason for which is, that however positive the other signs of pregnancy may be, they are worth nothing if it can be clearly made out that there is no tumour discoverable in the abdomen. Many circumstances, then, render it desirable that the practitioner should be an adept in the discovery of an abdominal tumour such as that caused by the gravid uterus. By palpation we are usually able to detect the presence of such a tumour at an early period of pregnancy, and the examination for the discovery of this, or, indeed, any abdominal tumour, should be conducted as follows:—The patient lying as above directed, the rectum and bladder having been previously emptied, the operator, having placed the hand flat on the abdomen close above the os pubis, is to follow the admirable procedure recommended by Rœderer. This consists in directing the patient to set the abdominal muscles in action by breathing very deeply, the hand being made, all the while, to follow the movements of the abdominal wall very closely. At the moment when the expiration is completed, the hand comes in contact with the hard, round, ball-like uterine tumour. In the discovery of tumours in the abdomen, which are not otherwise easily detected, this method of examination is quite invaluable. If the tumour be so large as to fill the abdomen, the method in question is of course of no service.

The recognition of a tumour is frequently, especially in cases of

pregnancy, made difficult by the presence of a *fatty condition of the abdomen*, which prevents us from ascertaining the presence of the tumour due to the enlarged uterus.

Supposing that by careful kneading of the abdomen at every point no hard tumour is discoverable, our conclusion must be shaped in this wise:—If the abdomen be soft, and everywhere non-resistant, allowing the fingers to sink inwards equally at all points, the enlargement not being considerable, it will be evident that the enlargement is not constituted by a solid tumour of any kind; we may even go farther than this, and state that neither can it be caused by a circumscribed fluid tumour (such as encysted dropsy of the ovary, for instance). If, however, the enlargement of the abdomen be *considerable*, the conclusion formed under the above circumstances cannot be so exact and definite. The fingers may be allowed to sink inwards some distance without encountering solid resistance, but there may nevertheless be a solid tumour. Such a condition is met with, as before remarked, when there is a solid or other tumour of the ovary, or a solid tumour of the uterus or of other organs *associated* with ascitic distension of the peritoneal cavity, or, again, when there is a very large unilocular cyst of the ovary occupying the abdomen, and which is not very tense or resistant. If, on the other hand, the condition of the walls of the abdomen be such as to prevent the sinking inwards of the fingers, this does not necessarily imply that there is, or that there is not, a solid tumour present.

The result of examination by palpation being that no tumour is discoverable, we must have recourse to the other method of examination, next to be described.

RESULTS OBTAINED BY PERCUSSION.

The middle finger of the left hand, being pressed closely against the abdominal wall, is to be struck by the tips of the fingers of the right hand, sharply but lightly. If a clear sound be elicited, it is evident that there is gaseous distension present; but if the sound be dull, the distension is due to fluid or solid matters. We have in this mode of examination a ready method of distinguishing *gaseous* from *fluid distension*: palpation would give but little assistance in deciding between these two. When the enlargement is due to the *presence of fat* in undue quantity, percussion affords no decisive results.

When it is a question between gaseous and fluid distension,

valuable aid is afforded by the *fluctuation* test. The palmar surface of the fingers of the left hand is pressed closely over one side of the abdomen, and the abdomen is lightly tapped by the fingers of the other hand on the opposite side. When fluid is present between the two points in question, an impulse is communicated through the aqueous medium, and the fingers of the left hand experience a sudden impulse, varying in character with the nature of the fluid and with the degree of tightness of the distension. No impulse of the kind is communicated when there is gaseous distension alone; but when there is an accumulation of fat present, a sensation somewhat resembling fluctuation may be conveyed. This, however, could only deceive an inexperienced observer. The test of fluctuation is, it is hardly necessary to remark, only of value when applied by an educated hand.

To apply these several methods jointly to the consideration of the case before us—that, namely, in which there is an *enlargement of the abdomen, offering no resistance on employment of palpation*. If the note on percussion be everywhere *clear*, the enlargement is due, in all probability, to gaseous distension of the intestines; the only other condition capable of simulating it being the rare case in which the uterus is distended with gaseous contents, or that in which an ovarian cyst derives gaseous contents from a communication with the intestinal canal. If, on the contrary, the percussion note be dull, the case is one of fluid effusion into the abdominal cavity (ascites), or of cystic disease of the ovary. It is rare to meet with a form of ovarian disease which would give this combination of signs—a non-resisting abdominal enlargement with dull sound on percussion. When, therefore, by the presence of fluctuation, by palpation, or by percussion, we are enabled to decide that there is fluid, or that there is gaseous distension, the difficulty is so far at an end. The consideration of the further diagnosis of these several cases will come presently.

Results of Percussion or Palpation doubtful.—We must next consider those cases in which nothing very decided has been made out from the employment of the tests applied. The cases are by no means infrequent in which we are unable to make out whether there be or whether there be not a tumour; the results obtained by palpation are not decisive; the sound elicited on percussion is not decidedly clear, nor is it the reverse; what is certain is, that the abdomen is enlarged. In most cases, the difficulty experienced is connected with an unduly fatty condition of the abdominal parietes or of the omentum, one or both, associated with tym-

panitic distension of the intestines; very frequently there is no tumour actually present, although the observer has the greatest possible trouble to convince himself that this view of the case is the correct one. The gaseous distension of the intestines is masked by the presence of the thick covering of fat spread over them, and a clear sound is consequently not elicited on percussion. This combination of slight tympanitic distension with accumulation of fat in the omentum and abdominal parietes is very commonly met with in women about the period of sexual involution, just at that period of life when the activity of the sexual organs is about to terminate; and when it happens that the patient is desirous of becoming pregnant—a not by any means unusual circumstance—the presence of this combined tympanitic and fatty distension of the abdomen, associated, it may be, with amenorrhœa, leads her to suspect that she is pregnant. Some most instructive cases illustrative of the points here set forth have been related by Dr. Gooch.* An examination of the state of the breasts and of the vagina must be made if the percussion and palpation results are indecisive, and if there be reasons for suspecting that a tumour is present.

A condition is sometimes met with where the abdomen is enlarged, no actual tumour discoverable, and where the intestines, more protuberant than usual, constitute the enlargement. This condition is met with sometimes during the first two months of pregnancy, while the uterus is yet too small to be felt above the pubes. In such a case, a subsequent examination, after an interval of two months or so, would clear up the difficulty. In all cases of suspected pregnancy, indeed, the element of time is a very valuable assistance to us in our diagnosis. The persistence for six months or upwards of an enlargement of the abdomen, with no signs of a tumour discoverable, would negative the suspicion of pregnancy.

In some cases, the difficulty experienced in the detection of the tumour, no undue amount of fat being present, arises from the fact that there are *great tenseness and resistance*, the distension being, for the most part, uniform and symmetrical; and the difficulty is greater, because this tenseness and resistance preclude us from exploring beyond the surface of the abdomen. We are unable to determine positively whether a tumour be actually present or not. Here the fluctuation test and the results of percussion only are available.

* See the late edition of Gooch, published by the New Sydenham Society, pp. 111, *et seq.*

The foregoing observations are intended to indicate generally the diagnosis of the several forms of enlargement of the abdomen one from another, and to assist in the first endeavour to discriminate roughly between them. In the following chapters will be considered separately:—

1. Cases in which the enlargement is due mainly to presence of fluid.
2. Cases in which the enlargement is due to gaseous distension.
3. Cases in which the enlargement is evidently due to presence of a tumour.

CHAPTER IX.

CONSIDERABLE ENLARGEMENT OF THE ABDOMEN DUE TO FLUID
OR GASEOUS DISTENSION.

ENLARGEMENT DUE MAINLY TO PRESENCE OF FLUID.—Ascites—Ovarian Dropsy—
Ascites and Tumour—Extreme Distension of the Bladder or Uterus—Diagnosis of
these Conditions one from another.

ENLARGEMENT OF THE ABDOMEN FROM GASEOUS DISTENSION.

THE cases first to be considered are those in which the results of
previous examination are such as to show that

THE ENLARGEMENT IS DUE MAINLY TO THE PRESENCE OF FLUID:
NO TUMOUR DISCOVERABLE.

At present it is proposed to consider the diagnosis of those cases
only in which there is wide-spread fluctuation, this being evident
over the greater part of the surface of the abdomen. And it must
be recollected that at present, also, the enquiry is limited to cases
in which the increase in the size of the abdomen is very con-
siderable.

The conditions between which we have ordinarily to distinguish,
and which may be accompanied by the physical signs in question,
are:—

Ascites;

Ovarian dropsy;

Ascites combined with presence of a tumour or tumours;

Some rare conditions to be presently mentioned, and not in-
cluded under either of these three categories.

In a subsequent chapter will be found a description of the
various forms of tumours originating in the ovaries. To the
chapter in question the reader is referred for particulars on this
subject. We are now, however, dealing with cases in which a deci-
sion as to the ovarian or other origin of the enlargement has still
to be made.

DIAGNOSIS OF ASCITES FROM THAT FORM OF OVARIAN DROPSY IN WHICH THE CYSTS ARE OF LARGE SIZE.

First, as regards the *size of the abdomen*. This gives us no reliable information. In both ascites and ovarian disease, the size of the abdomen may be very great.

As regards the *shape* of the abdomen, however, there is more to be said. In ascites, the abdomen becomes flattened when the patient lies down, while in ovarian disease this flattening is not observed. In ovarian disease largely distending the abdomen, the floating ribs are pushed outwards; the thorax is thus made to assume a peculiar conical shape. The enlargement of the abdomen in ascites is generally symmetrical, whereas in ovarian disease there is usually a swelling or prominence, more decided on one side than the other. This latter is a distinction which will not at all hold good when there is ovarian dropsy with only one very large cyst. The shape of the abdomen, speaking generally, is more ovoid in ascites, rounder in ovarian disease.

The *condition and appearance of the skin* vary usually in the two cases. In ascites, there is generally a marked enlargement and distension of the superficial veins, wanting in the other case. This is not to be depended upon; for in a case related by Dr. West, there was marked ascites, and the sign in question was not present. I have seen the *lymphatics* enormously distended in an advanced case of ovarian disease, but this condition of the lymphatics is probably the exception rather than the rule. Moreover, I have seen a precisely similar condition of the lymphatics in a case where the bladder was very largely distended from retroversion of the uterus, the uterus being the seat of fibroid growths. The lower part of the abdomen presented, in this latter instance, a most remarkable appearance; there were large cord-like, sinuous lines running upwards, most of them in the direction of the umbilicus. It would not be possible to arrive at any definite conclusion as to the nature of the enlargement, either from the condition of the veins, or from the condition of the lymphatics covering the surface.

There is *fluctuation* both in ascites and in ovarian dropsy. This sign presents some peculiarities requiring notice. In ovarian dropsy it is often very indistinct, and where the abdomen is distended by two or more large cysts, it is unequal at different parts of the abdominal surface. This inequality is of course not noticed in ascites. In cases of ascites, fluctuation is perceived equally well,

whatever may be the points between which it is sought for. If, however, there be one very large cyst, the same equality is observed in cases of ovarian dropsy. In both cases, the degree of facility of perception of this sign varies extremely, this being dependent on the degree of distension present.

Between ascites and ovarian disease the results of *percussion* practised at different parts of the abdominal surface would offer generally decisive distinctions. Thus, in cases of ovarian disease the fluid-containing cyst travels slowly upwards, displacing the intestines laterally, or thrusting them backwards against the vertebral column, the result being that there is a dull sound on percussion, which may, if the cyst be large enough, extend up to the ensiform cartilage, while there is a clear sound on percussion in the flanks, where the intestines are situated. In ascites, on the other hand, the intestines float on the surface of the liquid, and over the epigastric region there is a clear intestinal note on percussion, while in the flanks there is dulness on percussion. Thus, with the patient laid on the back, the most prominent portion of the abdomen is dull on percussion if ovarian tumour be present, but clear on percussion in ascites. The only exception to this latter statement is when the stomach and intestines happen to be glued down, and prevented rising and so floating on the ascitic fluid, by presence of adhesions. There is an exception to the other statement also, and that is when the ovarian tumour is *associated with ascites*. In such a case, there might be dulness above in the epigastric region, and in the flanks also.

The test as regards dulness or clearness on percussion in the flanks is not an absolute one; for in a case related by Dr. West there is said to have been a clear sound on percussion in the flanks, while the abdomen was largely distended by an ascitic effusion. The case in question is a very interesting one. The patient, aged 17, died, and was found to be the subject of cirrhosis of the liver, which latter was the cause of the ascites. There is evidently nothing to prevent the occurrence of gaseous distension and enlargement of the ascending or descending colon; and supposing such distension to be present in conjunction with ascites, the condition of things present in Dr. West's case would be encountered.

Another distinctive mark between ascitic distension and that due to ovarian disease is the result of percussion practised over the abdomen *in different positions of the patient*. Where there is ovarian cystic disease, the result of the percussion is the same,

whether the patient be lying on the back or on the side; but in ascites the fluid is generally at liberty to fall by the force of gravity, according as the body is placed, and a particular part of the abdominal surface might be clear and resonant on percussion with the body in one position, and dull when it is placed in another. In a doubtful case, this test should be applied.

The previous history of the case generally offers almost conclusive data if rigorously scrutinised. The fact that the abdominal enlargement began from below, on one side, and with a circumscribed actual perceptible tumour, points to ovarian disease; the absence of such a history would be in favour of ascites. The 'one-sided' origin of the tumour is not, however, so often to be made available as is usually stated. The history, in the more ordinary form of ovarian tumour, is described by Dr. Bright in the following words:—'The first recognised symptom is usually a 'tumour, not altogether devoid of pain, in one of the inguinal 'regions, and which, on examination, evidently rises out of one 'side of the pelvis, and even at this early period is sometimes distinctly lobulated or uneven in its form, and unequal in the 'resistance its different parts afford on pressure. The growth of 'this tumour is, on some occasions, so unperceived, that, though 'it may have originated on one side, it has already risen into the 'pubic and even the umbilical region; and when the medical 'man is first consulted, its lateral origin is with difficulty ascertained. At other times the enlargement is at first slow, and 'after some indefinite period the increase takes place suddenly, 'so that in a few months the whole abdomen presents to a common observer the size and appearance of pregnancy far advanced.'*

Again, as regards the history, in ovarian disease the enlargement is more often chronic—slower in progress than is the case in ascites; it is, in the case of ascites, attended with greater disturbance of the general health, and, in the latter case, there are generally to be detected signs of serious organic disease of the heart, of the lungs, of the liver, or of the kidneys. Moreover, dropsical effusion into the peritoneal cavity is more often than not associated with similar effusion (anasarca) in the lower extremities. It is in the last stage of ovarian disease, only—that is, of the *kind* of ovarian disease now under consideration, and not including cases of *cancerous* disease of ovaries—that anasarca of the lower extre

* *Clinical Memoirs on Abdominal Tumours*, New Sydenham Society's ed., p. 63.

mities is noticed. The dyspnœa produced by large distension of the abdomen in ovarian disease is generally much less considerable than that attendant on ascitic effusion, because in the latter case the dyspnœa is often of organic, not mechanical origin.

The general aspect and condition of the patient offer some criteria of value in the diagnosis. Mr. Baker Brown's description of the appearance of a patient in an advanced period of ovarian disease is very truthful:—There is 'emaciation about the neck and shoulders, and a peculiar expression of countenance. The face is 'elongated, thin, and rather shrivelled; anxiety and care are 'strongly depicted on the features, the angles of the nose and 'mouth are drawn downwards, the lips thinned, the cheeks furrowed; the eyes are remarkably defined, the space between the 'eyelids and bony margin of the orbits being sunken and hollow; 'indeed, the whole adipose tissue of the face is atrophied; the 'complexion is pale, but without that peculiar leaden aspect or 'sallow or parchment-like colour seen in malignant disease. It is 'mostly not till late in the disease that œdema of the extremities 'is noticeable, that the abdominal veins become prominent, or that 'the derangement of the digestive organs or the decreased quantity 'of urine is considerable.'*

DIAGNOSIS OF ASCITES FROM ASCITES WITH A TUMOUR.

We have hitherto considered the diagnosis of cases where the abdomen is much distended, and no tumour is perceptible to the touch, so far only as ascites and ovarian dropsy are concerned; but the condition present before us may be one of a somewhat different kind—that is to say, there may be ascites together with a tumour.

It most ordinarily happens that, when this conjunction of events comes under observation, the tumour is readily perceptible to the touch; and if such were the case, this would remove it altogether from the category of cases now under consideration—that, viz., in which no tumour is perceptible. But now and then a tumour is present in the abdomen associated with ascitic fluid, so considerable in quantity, that the presence of the tumour is not discoverable, or, at all events, readily so. Hence, a case where there is a tense enlarged abdomen, presenting fluctuation at all points, the fluctuation evidently indicating fluid in the peritoneum, may turn out to be one of the kind here alluded to. The most important

* *On Surgical Diseases of Women*, 2nd ed. p. 294.

of the cases coming under the present category are those in which the ascites is associated with *pregnancy*. Kiwisch alludes to an instance of this kind, where the operation of paracentesis was performed, and the trochar passed into a gravid uterus. Other instances are mentioned in Dr. Montgomery's work. It would appear, at first sight, perhaps, that a very simple consideration of the facts of a particular case would prevent the observer from falling into a similar error; but recorded experience shows that the matter is not so easy of solution in many cases. Examination of the uterus from the vagina, examination of the state of the breasts, a careful scrutiny of the circumstances preceding and attending the enlargement, become necessary. Pregnancy may be, as is evident from many recorded facts, very easily overlooked unless enquired after. Thus, a patient the subject of ascites, becoming pregnant, would naturally connect the increasing size of the abdomen with increase in her previous disorder; while the absence of menstruation might be set down by the medical attendant to the same circumstance.

It is to be remarked of these cases of pregnancy combined with ascites, that there is often present a dropsical condition of the lower extremities. In advanced cases of ascites, anasarca of the lower extremities is, as is well known, frequently present, and the case might be not unreasonably looked upon (by one not aware at least of the possibility of the existence of pregnancy) as one of ascites simply. Dr. Montgomery relates a case where the abdominal parietes were so exceedingly tense, and the quantity of interposed water so considerable, that the outline of the uterus could not be detected, nor the foetal movements felt, although the patient was seven months pregnant.* This circumstance alone is sufficient to indicate the nature of the difficulties which are liable to be encountered. A careful survey of the facts recorded by Dr. Montgomery and by others, leads to this conclusion—that the mistakes which have been made in diagnosis have arisen from the observer overlooking the possibility of the existence of pregnancy. It is therefore very important to recollect, in all cases where the woman is in a state for having children, and has an enlarged abdomen, that it is not sufficient at some previous period to have established the diagnosis of ascites. The diagnosis must be made afresh from time to time, and the state of the abdomen must undergo regular investigation; and this is more

* *Op. cit.* pp. 139, 149, 162.

especially necessary if any operative measures, such as tapping, be contemplated. The observer should always make it a practice before going further, to demonstrate to himself that the patient is not pregnant. Dr. Montgomery's remarks on this subject necessarily carry great weight. After quoting several cases in which fatal mistakes have been made, he says:—'Such occurrences 'forcibly impress on us the necessity of strictly adopting as a rule 'of practice, that whenever a woman is so circumstanced that she 'may possibly be pregnant, she should not on any account be 'tapped for dropsy, or subjected to very active treatment, until a 'full and careful examination has been made by competent hands, 'to ascertain whether she is pregnant or not, or has the uterus 'distended; and if her state be at all doubtful, and other circumstances permit, the operation should be deferred until a further 'lapse of time shall have satisfied us as to the exact nature of 'the case.'*

Ascites may be associated with presence of other tumours. One of the most common cases is perhaps that in which there is an *ovarian tumour together with ascites*. Here the remark applies equally as in the case of pregnancy, that usually the distension is not so great as to prevent recognition of the tumour. Still it may be so. This association of ascites and ovarian tumour is more generally observed in cases where the ovarian tumour is of a malignant character than where simple cystic disease is present.

In an advanced stage of the disease, ascites, combined with *hydatid disease of the liver and peritoneal cavity*, may give rise to great distension of the abdomen. The history of such a case, but chiefly the presence of great enlargement of the liver, would point to the true conclusion, or, at all events, would afford indications sufficient to negative the idea that the enlargement of the abdomen was due to disease of any of the generative organs. Where a tumour is recognisable, the difficulty in diagnosis is necessarily not so great as in the case above supposed.

Lastly, respecting the diagnosis of these cases of extreme distension of the abdomen, where a tumour is suspected to be present together with ascitic effusion, it is to be remarked that, if the operation of tapping be performed, it is afterwards very easy to substantiate the presence or absence of such tumour. And, in point of fact, in some cases of ovarian dropsy associated with ascites, a preliminary operation of this kind may be necessary to

* *Op. cit.* p. 324.

enable us more nearly and more conveniently to ascertain the size, position, and relations of the tumour.

SOME RARE CONDITIONS CAPABLE OF SIMULATING ASCITES OR OVARIAN DROPSY.

There are certain conditions very rarely met with, but which require to be mentioned, inasmuch as they may give rise to a considerable distension of the abdomen, and may present physical signs such as those observed in cases of ascites, or of ovarian dropsy, or of tumour with ascites. One of the conditions in question is *extreme distension of the bladder* from prolonged retention of urine. A case will be found mentioned by Dr. Gooch,* in which retention of urine was associated with pregnancy, the distended bladder assuming a flattened form, owing to the resistance of the gravid uterus behind it; there was fluctuation, and the case was, in fact, assumed to be one of 'dropsy.' The case was originally related by Dr. Lowder, who stated that paracentesis was performed, that the trochar passed through the bladder, through the wall of the uterus, and even into the head of the child. Here the mistake probably arose from the presence of fluctuation over a considerable surface; but if percussion had been practised near the lumbar regions of the abdomen, or if even the suspicion of pregnancy had crossed the mind of the observer, the mistake might probably have been avoided.

In some very rare cases, *extreme distension of the uterus by fluid* has simulated ascites. The causes of distension of the uterus by fluid will be more fully considered further on. Here it is sufficient to call attention to the fact.

Cystic Disease of the Abdomen, not of Ovarian Character.—

In some rare cases, large cystic growths have been met with simulating ovarian dropsy. They will be further described in another place. It is just within the limits of possibility that such a case might, the cyst being of large size, resemble one of ascites.

ENLARGEMENT OF ABDOMEN DUE TO GASEOUS DISTENSION.

When the note on percussion is tympanitic at any particular part of the surface of the abdomen, this indicates necessarily the presence of gaseous distension at that spot. When the greater part of the abdominal surface presents this condition, the disten-

* Quoted also by Montgomery, *op. cit.* p. 324.

sion in question generally proceeds from the presence of gas in the intestines, in the stomach, or both. This form of *tympanitis* is witnessed in the advanced stage of fevers of various kinds, in puerperal fever, and under other circumstances. The comparatively sudden occurrence of the enlargement, the perfectly normal state of the abdomen previously, and the results of physical examination generally, render the diagnosis a matter of no difficulty.

Cases are very common in which the surface presenting a tympanitic note on percussion is more limited. These cases need not be considered, however, just at present; and they will engage our attention in speaking of the diagnosis of 'tumours' of the abdomen.

Some remarks bearing on the question of diagnosis where the abdomen is tympanitic, and where the walls of the abdomen contain an undue quantity of fat, will be found at p. 315.

CHAPTER X.

ENLARGEMENT OF THE ABDOMEN DUE TO PRESENCE OF A TUMOUR. ENUMERATION AND CLASSIFICATION OF ABDOMINAL TUMOURS.

Cases simulating Presence of a Tumour; Phantom Tumours—Distinction of Abdominal Tumours into those which proceed from the Pelvic Cavity, and those which do not—Enumeration of the Tumours coming under these two Heads—Method of determining the Position and Origin of the Tumour.

THE previous analysis has been limited to those cases where the enlargement is not due, or not evidently due, to presence of a tumour in the abdomen. Before considering the cases now before us—cases of real, tangible tumour—we have to dispose of

CASES SIMULATING PRESENCE OF A TUMOUR.

The difficulty occasionally experienced in substantiating what we have every reason to suspect—the presence of a tumour in the abdomen—has been already pointed out. We have now to consider a difficulty of an opposite kind—viz. where, although the appearances present simulate those of a tumour, these appearances are altogether deceptive.

There are a very considerable number of cases on record in which the event has proved that no tumour could have been present, and in which a very positive, but erroneous, diagnosis has been made to the contrary, often with very serious results to the patient. Facts of this kind will be found recorded in the work of Dr. Montgomery. One of the most extraordinary was the case of a woman who, in the year 1828, was operated upon in Berlin, under the idea that the case was one of extra-uterine pregnancy: on cutting into the abdomen, no tumour, and no enlargement of any viscus, was detected. The abdomen has been opened with the intention of removing ovarian tumours, no tumour of any kind being discoverable. And the case is very far from uncommon in which women are supposed to be pregnant, and to have a tumour

in the abdomen, when the event completely falsifies the diagnosis. In many cases, where such mistakes have been made, it is easy to see that sufficient care was not taken in substantiating the presence of a tumour, in defining its limits, &c.; but in some instances the appearances present were evidently calculated to mislead.

So-called 'Phantom Tumours.'—The cases which present most difficulty are those in which an abdominal tumour is simulated, in hysterical women, the abdominal muscles being contracted in such a manner as to give the impression of a tumour to the hand of the observer. The tumour, however, has this peculiarity: 'If,' as Dr. Montgomery remarks, 'the patient can be made to forget that she is under examination, by completely diverting her attention, as by keeping her in conversation on some subject unconnected with her own case or state, while, at the same time, the hand is kept pretty firmly pressed on the abdomen, the tension gradually relaxes, the size diminishes, and all sensation of a tumour is lost.'* Change of position may succeed in producing this disappearance of the tumour; but by giving chloroform, as was first pointed out by Dr. Simpson (see p. 312), the reality of the tumour is most completely tested. While the patient is under chloroform, the hand is allowed to sink inwards at the point where previously the tumour appeared to be situated. When the abdomen is covered with an undue quantity of fat—a condition often also associated with presence of fat in the omentum—the difficulty the observer experiences in satisfying himself that no tumour is actually present becomes more considerable; and chloroform may in such cases be quite essential to the making of the diagnosis. It is not absolutely certain how the deceptive appearances of a tumour are actually produced, but it is probable that in most cases they are due to partial contractions of the recti abdominis muscles, a particular segment of the muscle being in a state of chronic contraction, and forming a rounded mass under the hand.

With a careful exercise of the various precautions recommended, the number of cases in which there will be a difficulty in ascertaining that a tumour is actually present, or the reverse, should be inconsiderable; and the observer who is forewarned respecting these cases of phantom tumour, will find the recognition of their true nature comparatively easy.

Having cleared up any doubt as to whether there be actually a

* *Op. cit.* p. 398.

tumour present or not, the further steps to be taken will now be considered.

It may perhaps be necessary to observe, also, that it is not intended to discuss at length the differential diagnosis of *all* tumours of the abdomen. So far as is necessary to the elucidation of the questions which do fall within our province, the subject must be treated generally; for, until a certain amount of knowledge of the case before us has been acquired, we cannot tell whether we have to do with a disease of the liver, of the spleen, of the uterus, ovaries, &c.

It will be found convenient for purposes of diagnosis to begin with determining, by physical examination of the tumour, under which of the following heads it should be placed; and, this elementary diagnosis having been made, to pursue further enquiries in the direction thus necessarily indicated:—(A) The tumour proceeds from, or is connected with, the pelvic cavity; (B) The tumour is not connected with, or not distinctly traceable into, the pelvic cavity.

(A) TUMOURS WHICH ARE TRACEABLE, OR MAY APPEAR TO BE TRACEABLE, INTO THE PELVIS.

Enlargement of the uterus, from pregnancy, fibrous tumour, &c.
Ovarian cystic disease or tumour.

Enlargement and distension of Fallopian tube.

Extra-uterine pregnancy (usually).

Peri-uterine hæmatocele.

Distension of the urinary bladder.

Pelvic abscess.

The more uncommon causes are:—

Fæcal tumour.

Sub-peritoneal cysts.

Cysts in omentum.

Fibrous, cancerous, or osseous growths from pelvic bones.

Hydatid tumour.

Enlargement of spleen (when the spleen is so enlarged as to extend into the pelvis).

Cancer of peritoneum.

Cysts or tumours connected with the kidneys.

Distension of ureter.

Enlargement of liver.

Retained encysted foetus (which may also come under the next head (B)).

(B) TUMOURS NOT TRACEABLE, NECESSARILY SO AT LEAST, INTO
THE PELVIS.

Disease of the liver, giving rise to enlargement of the organ,
hydatid tumour, &c.

Enlargement of the spleen.

Hydatid tumours in cavity of abdomen.

Fæcal tumour.

Fibrous tumour of the uterus, pedunculated.

Cancer of peritoneum.

Fat in omentum.

Enlargement, &c., of kidneys.

Movable kidney.

It will be seen that while some of the tumours mentioned come under both heads, being traceable or not into the pelvis according to circumstances, the great majority of them lie distinctly on one or the other side of the line of demarcation. It will generally be found comparatively easy to determine the series to which the tumour before us belongs. Commencing at the most prominent part of the tumour, and pressing gently but firmly through the abdominal parietes on its surface, the continuity of the surface in question is to be traced in all directions, and the limits of the same accurately made out. Thus, a tumour, the most prominent part of which is just above the umbilicus, may be traced upwards from that point to the margin of the ribs on the right side, being at that point not separable from the liver; while, on endeavouring to trace it downwards, it may be found to cease abruptly at the umbilicus, or a little below it. Such a tumour would belong to the second of the above series. The fact that the tumour ceases at the point indicated may be made out simply by palpation, the abdominal wall being lax or thin; but palpation alone may not be sufficient to establish this when the opposite state of things prevails, and percussion is then of service. Thus—to take again the above illustration—the tumour being hard, firm, and dull on percussion superiorly, the fact that at a particular point this dulness was exchanged for a tympanitic note, this tympanitic note being identical with that obtained over the lower part of the abdomen generally, would lead to the desired conclusion as to the lower limit of the tumour. Again, in the case of a tumour presenting the fluctuation sign, the limit of the fluctuation would of course indicate the limit of the tumour; it would be necessary to

recollect that, in the case of a tumour of a composite character, fluctuation might cease at a particular point without this necessarily indicating that this was the boundary of the tumour. And with reference to this particular sign, fluctuation, there is this general caution to be given—that it by no means follows, because a tumour contains fluid, that fluctuation should be perceivable: when the walls of the cavity containing the fluid are very tightly stretched, fluctuation may be entirely absent. Lastly, in determining whether the tumour proceeds or not from the pelvis, the history of the case may give important information. This information, however, is very often found to be either wanting, or so devoid of accuracy as to be practically worthless.

Having proceeded so far with the diagnosis of a tumour of the abdomen as to have ascertained that it clearly belongs to one or other of the series—that is to say, either traceable into the pelvis, or not so traceable—we may advance still further our diagnosis by adopting one of two or three procedures:—(a) By an attentive consideration of the *history* of the appearance and growth of the tumour and the attendant phenomena; (b) by a careful comparison and estimation of the data derived from physical examination of the tumour itself, by palpation, percussion, auscultation, &c.; or (c) by a combination of these two procedures.

The diagnosis is usually arrived at, by experienced observers, by a mental process of the following kind:—The general facts relating to the history of the case induce the observer to make a presumptive diagnosis at once. A kind of theory is adopted, and this theory is forthwith tested by a more particular examination; and if it be found to break down under that examination, another theory is adopted, to be tested in like manner, until a result is arrived at which is considered satisfactory. A beginner should postpone forming a theory on the matter at all until all the data available have been got together, and can be compared in such a manner that undue prominence and significance be not given to particular ones among them.

CHAPTER XI.

TUMOURS TRACEABLE INTO THE PELVIS.

RARER FORMS OF TUMOUR.—Enlargement of the Liver—Hydatid Disease of the Liver—Cancerous Disease of the Abdominal Viscera—Fæcal Tumour—Enlargement of the Spleen—Cysts or Tumours connected with the Kidneys—Sub-peritoneal Cystic Tumour—Cysts of Omentum—Retained Encysted Fœtus—Fibrous, Cancerous, or Osseous Tumour of Pelvic Bones—General Remarks on the Diagnosis of these Tumours—Tumours of the Fallopian Tubes, of various Kinds—Pelvic Abscess—Peri-uterine Hæmatocele.

TUMOURS MORE COMMONLY OBSERVED.—Enlargement of the Uterus, including Pregnancy, Tumours of the Uterus, &c.—Ovarian Tumours—Distension of the Bladder, liable to be mistaken for Ovarian Tumour—General Remarks on the Diagnosis of Uterine from Ovarian Tumours.

THE present chapter will be devoted to the consideration, first, of certain of the more uncommon varieties of tumour originating in the pelvis, or connected therewith, an enumeration of which will be found at page 330; and, secondly, of the general diagnosis of ovarian from uterine tumours.

TUMOURS TRACEABLE INTO THE PELVIS, MORE RARELY MET WITH.

ENLARGEMENT OF THE LIVER

to such an extent that the tumour reaches to the pelvis must be exceedingly rare. In a case of this kind, a careful examination shows a perfect continuity of the tumour with the liver above. The tumour is hard, resistant. The history of the case is agreeable with the theory that the tumour originated in the liver. But although simple enlargement to a considerable extent is rare, cases are not so uncommon in which a tumour growing from the liver extends downwards even as far as the pelvis, or which is, at all events, apparently continuous with tumours which do so extend into the pelvis (see next paragraph).

HYDATID DISEASE OF THE LIVER

may give rise to a tumour extending from the liver into the pelvis, and the abdomen may become enormously distended by the parasitic

growth in question. A very remarkable case related by Dr. Bright* may be referred to, although the case in question was that of a male, as showing how far the disease in question may go. The nature of the case was clearly evident during life, the hydatids forming 'round, well-defined, elastic tumours' all over the abdomen, and in places forming elevations visible to the eye. The patient's age was 14. The hydatids were first developed in connection with the liver. The first sign of disease was the feeling a hard lump in the right side below the false ribs. The disease rapidly progressed, general emaciation and constantly increasing abdominal enlargement being the chief symptoms. There was dulness on percussion all over the abdomen, except at one part, just to the left of the umbilicus. It would seem difficult to avoid recognising the nature of an abdominal enlargement due to this cause; an ovarian tumour reaching to the liver, and presenting rounded projections due to the contained cysts, might be possibly mistaken for it by an inexperienced observer. But an ovarian tumour growing to such a size as this would generally have a history essentially different. The ovarian tumour would have grown from below upwards, and at some previous time would have been limited to the lower part of the abdomen. This distinction may fail in some cases. The physical characters of an ovarian tumour of this magnitude will be given further on. Here may be mentioned an interesting case related by Dr. Bright, in which the tumour present was due to hydatids, but closely simulated an ovarian tumour. The woman was 54 years old, and presented an enlargement of the abdomen, dating from nine or ten years previously, but only very obviously noticed for three years. The abdomen 'was greatly enlarged; the upper two-thirds occupied by an irregular tumour, indistinctly fluctuating, and, in various parts, somewhat tender on pressure: the lower part of the abdomen was also occupied by a fluctuating tumour, apparently a large cyst arising from the pelvis. The intervening space was soft, and was the only part which gave a clear or tympanitic sound on percussion.' A drawing accompanies the description of the case. 'From its peculiar and irregular form,' Dr. Bright concluded 'that it consisted either of hydatids extensively distributed, or was an ovarian tumour; and if the latter—which, from its very singular form, and more particularly from the existence of the upper portion so separated from the lower, I could scarcely believe—I

* *Op. cit.* p. 30.

‘supposed that it must be one of those complex and malignant forms of disease. . . .’* The case turned out to be one of hydatids. There were two large cysts, one above and one below, the upper one incorporated with the liver, and between and in front of the two was stretched the transverse colon. Cases of this kind are extremely rare.

CANCEROUS DISEASE OF THE ABDOMINAL VISCERA, ABOVE THE PELVIS, may give rise to a tumour which is found to extend downwards as far as the pelvis. Practically, however, such a tumour can hardly be confounded with any of the tumours with which we are more particularly concerned. In *cancer of the kidney*, the lower margin of the tumour would, even in extreme cases, be felt above the brim of the pelvis, unless distension of the abdomen from ascites prevented it. ‘*Colloid cancer of the omentum*,’ says Dr. Walshe, ‘spreading like a sort of apron in front of the intestines, gives rise to dull percussion sound in proportion to its extent.’† This is a very rare disease. *Cancer of the post-peritoneal cellular tissue*, also a very rare affection, may give rise to a tumour slow in growth, and which may moreover grow downwards into the pelvis.‡ The presence of nodules of a cancerous nature, perceivable in the abdominal walls externally, is an important diagnostic sign, although it is one not by any means always observed.

FÆCAL TUMOUR.

A tumour due to faeces accumulated at any particular part of the intestinal tract, may extend into the pelvis and simulate a tumour growing from that part. A faecal tumour is known by its irregular shape, by its doughy feel; it is dull on percussion at one part, and clear at another (from presence of flatus); the state of the bowels also is peculiar, great costiveness being present; and, moreover, the tumour disappears on administration of purgatives. Dr. Walshe gives an important caution, however, in reference to the uncertainty of such deduction, viz. that occasionally the solid matters cling to the wall of the bowel, leaving a passage in the centre; the tumour remains, and is a faecal tumour, while the patient is passing daily liquid stools.§ More generally, faecal tumours can be entirely isolated from the pelvis by means of the ordinary abdominal examination, and it is consequently more

* *Op. cit.* p. 13.

† Walshe, *op. cit.* p. 311.

‡ *On Cancer*, p. 310.

§ Walshe, *op. cit.* p. 315.

common for faecal tumours to be mistaken for other than those which grow from the pelvic cavity.

ENLARGEMENT OF THE SPLEEN,

the organ attaining such a size as to extend into the pelvis—an occurrence which must be very rare—could hardly be mistaken for an ovarian or uterine tumour, if the smallest pains were taken in investigating the history of the case.

CYSTS OR TUMOURS CONNECTED WITH THE KIDNEYS.

A case is detailed by Dr. Bright in which a large cyst containing puriform matter, and connected with the left kidney, simulated disease of the ovary. The patient was married, æt. 34. ‘For about three years she had a tumour on the left side of the abdomen; the exact situation of the part at which it commenced is not ascertained, but it appeared to have been sufficiently low down to have excited a suspicion that it depended on the ovary.’ After death, ‘a large but soft tumour was seen occupying the greater part of the left lumbar and iliac regions.’ It was an enlargement of the kidney, and had, when cut into, the appearance of a membranous cyst, the walls of which were an eighth of an inch thick. It contained dirty, discoloured, watery pus.*

In cases of *distension of the ureter*, a tumour may be detected on one side near the vertebral column, but it does not appear that such a tumour has ever been confounded with tumour of pelvic origin: ordinarily the circumstances are such that tumours connected with the kidneys or ureters are not confounded with those originating in the pelvis.

SUB-PERITONEAL CYSTIC TUMOUR.

A very rare and exceptional case is that in which cysts situate externally to the peritoneum grow and form tumours capable of simulating ovarian cysts. Such a case is alluded to by Kiwisch.† The tumour formed gradually, attained a large size, was repeatedly tapped, and large quantities of fluid evacuated. The patient’s age was 20. And the tumour first appeared after suppression of menstruation, the suppression occurring very soon after menstruation had begun. After death, three large tumours, one composed of a large cyst, and the two others of cysts together with fibrous tissue, were found behind the peritoneal membrane, occupying the

* *Loc. cit.* p. 223.

† *Klin. Vortr.* Bd. ii. (by Scanzoni), p. 327.

lumbar and hypochondriac regions, and extending down into the pelvis.

Somewhat analogous to this is a case reported by Mr. Safford Lee,* in which a large tumour of the abdomen had existed for 25 years. It at last completely filled the abdomen and killed the patient. It was found to have commenced on the left side, just under the pancreas, but below the peritoneum, so that it rested on the posterior walling of the abdomen. A narrow pedicle six inches long, of the size of a quill, connected it with the uterus. It was filled with turbid fluid, balls of fat and hair, calcareous matter, and a mass containing teeth and bones, strongly resembling an imperfect fœtus. This appears to have been a case of 'included fœtus.'

CYSTS OF OMENTUM.

Mr. Safford Lee reports a case which was under the care of Dr. A. T. Thomson. The patient had been tapped 48 times. The tumour began on the right side of the abdomen. After death it was found to have originated in the omentum close by the pancreas, and was attached by a long thin portion to the uterus, but was entirely unconnected with the ovaries. At the upper part of the abdominal cavity attached to the peritoneal surface, were a number of well-defined cysts containing a clear fluid.†

RETAINED ENCYSTED FŒTUS.

In some very uncommon cases, the fœtus, the product of an extra-uterine pregnancy, dies, having attained a certain stage of maturity, and remains, enclosed in a kind of cyst, in the abdomen of the mother, for a time which varies from a few weeks to many years. The history of these cases is necessarily peculiar and characteristic. The woman states that at a certain time she was pregnant, that the symptoms of pregnancy advanced pretty regularly, that at the time pregnancy should have terminated pains set in, and these, after lasting a certain time, went off, no delivery having occurred, and that the tumour which is felt through the abdominal walls dates from the period in question. Presence of such a tumour is not incompatible with further pregnancy and healthy delivery, instances being known of women bearing mature and healthy children, the mummified body of the extra-uterine fœtus still remaining within the abdomen. The tumour in these

* *On Tumours of the Uterus, &c.*, p. 124.

† *Ibid.* p. 123.

cases is usually low down in the pelvis, or at all events partially so, and it is usually recognisable by vaginal examination (see p. 207). In a case which I saw in Bartholomew's Hospital, under the care of my friend Dr. Greenhalgh, the tumour reached to the umbilicus, and it extended low down in the pelvis.

FIBROUS, CANCEROUS, OR OSSEOUS TUMOURS, GROWING FROM THE
PELVIC BONES INWARDS,

may give rise to tumours perceivable through the abdominal walls. The firmness of these tumours, their want of mobility and other physical characters, render their diagnosis from other more common abdominal and pelvic tumours easy. They are excessively rare.

Of the conditions which have now been mentioned, viz., enlargement of the liver, hydatid disease of the liver, cancerous disease of the abdominal viscera, or in the abdominal walls, fecal tumours, enlargement of the spleen, cysts, &c. originating in the kidneys or uterus, cystic tumours behind the peritoneum or in the omentum, retained encysted fetus, fibrous or osseous growths from the pelvic bones, some are exceedingly rare, others are more common. The more common of these conditions, however, such as fecal tumours, have generally symptoms so well marked, that the observer would, knowing the possibility of the occurrence of such conditions, readily recognise them, or at all events succeed in demonstrating their non-connection with the generative organs. One distinction between these tumours and those originating in the generative organs is very important, and one which can generally be relied upon, viz., that when the tumour originates in the generative organs, the vaginal examination shows some displacement, or some abnormal condition, of the uterus, or is the means of detecting a tumour in the pelvis. This negative evidence is of great weight.

The tumours next to be considered are met with rather more frequently. Some of these also are, however, rather uncommon. Tumours of the ovaries, tumours of the uterus, including pregnancy—these are very common, but tumours of the Fallopian tubes are comparatively rare.

TUMOURS OF THE FALLOPIAN TUBES.

The conditions capable of giving rise to tumours of the Fallopian tubes are, distension of the tubes by serous, purulent, or bloody

fluid, and Fallopian pregnancy. These conditions have been severally and particularly described already (see 'Examination of the Vagina,' p. 204). When these tumours attain a certain size, they are perceivable also by examination of the hypogastric region of the abdomen, and even when they are of no considerable size, they may be felt in this position if the abdominal walls be thin and non-resistant. Tumours of the Fallopian tubes exceeding the size of an apple are rare, but it should be known that they *may* attain so large a size as to be capable of being mistaken for ovarian tumours. The tumour is generally elongated or pyriform in shape, and movable, and there may be a tumour on both sides. The position in which the tumour is felt is just above the groin—behind and below Poupart's ligament. The history of the progress of the tumour is generally diagnostic, to a certain extent, of its nature. Cases of tubal pregnancy are very rarely diagnosticated, inasmuch as rupture of the tube takes place before anything wrong is suspected; and if the pregnancy proceed to a later period, the case is usually looked upon as one of normal gestation. There are no physical signs by which a case of very extreme dropsical distension of one tube could be certainly distinguished from an ovarian tumour. In such a case, the history would probably throw some light on the subject. For further particulars see p. 204.

PELVIC ABSCESS.

When an enlargement at the lower part of the abdomen is observed in a woman who has been delivered recently, who has recently had an abortion, or who has been the subject of an operation involving the generative organs, the formation and development of the tumour having been attended with inflammatory symptoms, tenderness, feverishness, &c., the existence of pelvic abscess is to be suspected. The symptoms have been already particularly described, and the reader is referred to this description for further information on this important subject (see p. 226).

The diagnosis of pelvic abscess is usually easy. The abscess forms in the pelvis, and may rise above this cavity, and be perceivable in one or other groin, or even considerably higher; or it may form a tumour, rising in the middle line above the pubes. Its limitation by palpation is often not easy, owing to the great pain on pressure, but by percussion a limitation can be made out. Later on, the skin covering the tumour may become red and

inflamed, and evacuation of the abscess occurs through the abdominal wall. The abscess may, however, burst into the vagina, or into the bladder, rectum, &c.

The frequency with which pelvic abscess forms a tumour perceivable through the abdominal walls may be judged of by the results of Dr. M'Clintock's experience. This distinguished observer found that in 70 cases of pelvic cellulitis, of puerperal origin, the case ended thus:—37 ended in suppuration with discharge of pus; 24 of these burst or were opened externally, viz., 20 in the iliac region, 2 above the pubes, 1 in the inguinal region, and 1 beside the anus; 6 were discharged *per vaginam*; 5 by the anus, and 2 burst into the bladder. In not one of these puerperal cases did the abscess burst into the peritoneal cavity, while this result was several times observed in a much smaller number of non-puerperal cases. In the diagnosis of the tumour, Dr. M'Clintock, attaching, and most justly, much importance to its early recognition, advises that the iliac regions be carefully and daily examined by the hand, in all cases of convalescence after uterine inflammation, or when the patient has been subjected to the operation of causes tending to produce pelvic abscess.* A persistent hardness and swelling in one of the iliac regions, unconnected with the uterus or ovary, with more or less tenderness on pressure, continuous uneasiness, and presence of febrile symptoms, should excite suspicion of pelvic abscess.†

There are other conditions capable of giving rise to abscess, which abscess may present at some portion of the abdominal wall, above the groin, or in the middle of the abdomen. In some rare instances these conditions might be confounded with pelvic abscesses of the more ordinary kind.

Abscess in the iliac region may be due to caries of the vertebral column; abscess above Poupart's ligament on the right side may be due to inflammation or obstruction of the appendix vermiformis. In cases of retained encysted foetus, suppuration, formation of abscess, and spontaneous discharge of the contents through the abdominal wall, are frequently observed. In this latter event there would be a history of peculiar character (see p. 387). Ovarian tumours sometimes suppurate, and the resulting abscess opens externally.

The condition with which ordinary pelvic abscess is more likely to be confounded, is peri-uterine hæmatocele. In both the

* *Op. cit.*

† M'Clintock, *op. cit.* p. 49.

tumour rises from below, and the margin of the tumour in both cases is rounded, generally rising higher on one side, presenting variations in hardness and resistance, or softness and fluctuation, according to the stage of the affection. And it now and then happens that the contents of the hæmatocele undergo a process of suppuration, the hæmatocele becoming converted into an abscess.

The tumour due to peri-uterine hæmatocele forms rapidly, that due to pelvic abscess slowly: this is the principal distinction.

PERI-UTERINE HÆMATOCELE.

In cases of peri-uterine hæmatocele, a defined tumour, or a hardness, resistance, and dulness not well defined, may be found to extend upwards a variable distance above the brim of the pelvis. It may reach beyond the umbilicus. There is in such cases an effusion of blood, and this blood, at first fluid, afterwards coagulated, forms the intumescence. The history of such cases is peculiar, the formation of the swelling occurs quickly, is attended with alarming faintness and prostration, and with an assemblage of symptoms which have been already alluded to more than once (see pp. 53, 147, 208). The physical characters of the tumour vary according to the stage at which the observation is made. The want of solidity and of rotundity, and its extension generally across the whole of the hypogastric region, are the peculiarities which chiefly distinguish it from other tumours of this region. Retention of urine, which may be produced by the condition in question, might possibly mask the true nature of the case; the distension of the bladder might, under such circumstances, disguise the other swelling.

One form of ovarian disease might be confounded with peri-uterine hæmatocele; thus in one of an interesting series of cases, related by Dr. M'Clintock, the tumour due to the hæmatocele was for a time considered to be an ovarian tumour, into which hæmorrhage had occurred. The principal points to be borne in mind in the diagnosis of tumours suspected to be due to hæmatocele are, the sudden occurrence of the swelling, the previous occurrence of marked menstrual disturbance of some kind, and the peculiar feel communicated by the tumour. The preceding menstrual symptoms are the least constantly significant.

In cases where peri-uterine hæmatocele is suspected, a vaginal examination should be made. The distinction of the various causes of peri-uterine hæmatocele must be gathered from what has been already stated as to the pathology of this condition. The

distinction of cases in which the effusion of blood is due to rupture of the walls of the containing cyst in extra-uterine pregnancy (tubal or abdominal), from cases of hæmatocele unconnected with gestation, is difficult. Unless the pregnancy have advanced beyond the third or fourth month, pregnancy may have been unsuspected at the time of the appearance of the tumour, and it would be exceedingly difficult to say, in the absence of a definite history, what is the precise nature of the case.

TUMOURS TRACEABLE INTO THE PELVIS, MORE COMMONLY OBSERVED.

We have now eliminated from the enquiry several out of the list of tumours traceable into the pelvis, enumerated at p. 330. The most important remain for consideration, and we have now to determine whether the tumour which is present be due to

Enlargement of the uterus, including pregnancy, normal and abnormal, tumours, &c. of the uterus.

Ovarian tumours.

Distension of the bladder.

The tumours of the abdomen, respecting which a diagnosis is most frequently required, belong to this series, the cases not so included being, comparatively speaking, very few in number.

The three conditions above enumerated have this in common, that the tumour constituted by either one of them is generally situated in the middle line of the abdomen at the time that an abdominal examination is made; for although an ovarian tumour begins necessarily on one side of the pelvis, by the time that it forms the subject of investigation, it usually comes to occupy a nearly central situation.

Let us suppose a case as follows: A rounded, well-defined tumour is found extending from the pubes up to the umbilicus, dull on percussion, slightly movable to one or the other side. Such a tumour may be constituted by a distended bladder, by enlargement of the uterus (due to pregnancy, catamenial retention, polypus, &c. &c.), or by an ovarian tumour, and taking the physical signs just mentioned *alone*, as criteria, they offer no means for positively distinguishing between the three. In the majority of such cases, the history often enables us to pronounce nearly confidently on the matter, and with further help from a vaginal examination, little doubt usually remains as to the diagnosis, but now and then the diagnosis between uterine and ovarian tumours is very difficult.

DISTENSION OF THE BLADDER.

We may dispose of this condition before proceeding to the consideration of the other classes of cases. The tumour due to this cause is always (in uncomplicated cases) of recent formation, and it dates back but a short time. A very instructive case, and one illustrating well the nature of the difficulties liable to be met with in determining this point, recently came under my care while acting for Dr. Tyler Smith, and in his absence, at St. Mary's Hospital. The case was that of a woman *æt.* 46, married, the mother of one child, 17 years old. She presented herself at the hospital with an enlargement of the abdomen of three weeks' duration, and it was supposed by those who had seen her that there was a tumour present. Her legs were very oedematous, the abdominal wall externally presented enlarged lymphatics, with great puffiness of the skin covering the hypogastric and inguinal regions. There was a distinct well-defined tumour, rising from the pelvis and reaching to three inches above the umbilicus. This tumour was not tender. It was hard, firm, not fluctuating, and gave the impression at first sight of being an ovarian cyst. Vaginal examination was difficult owing to the extreme pain it occasioned, the vaginal walls were protruded in a swollen oedematous state, and in the form of tumours, through the vulvar aperture. The os uteri, however, was felt to be high up behind the pelvis, and a round, firmer, hard tumour occupied the pelvis itself. There was, judging from the history of the case, no evidence of pregnancy. She stated that she passed water freely, and had done so for the last three weeks. The examination *per vaginam* was so difficult as to be unsatisfactory; the *primâ facie* view of the case was that it was an instance of rapidly growing ovarian cystic disease. As a preliminary to further exploratory measures, a catheter was introduced into the bladder. The discovery was then made that the tumour was due to an enormously distended bladder, and nearly six pints of urine, slightly, but not greatly offensive, were drawn off, the tumour above the pubes entirely subsiding. The further information was then obtained by examination that the uterus was enlarged, that a large fibrous growth occupied the posterior wall of this organ, that the whole organ was retroverted in the pelvis, and that this was the cause of the retention of urine. The fibrous growth was situated chiefly external to the uterine wall, and altogether the uterus was about the size of the gravid uterus of between three and four months. Further enquiry now elicited

some interesting facts in the history of the case, but which had not been alluded to by the patient until they were specially asked for. It appeared that three days before the abdomen began to swell, she had slipped down stairs over five or six steps, and strained herself in so doing, but she took no notice of this, as no immediate inconvenience resulted. There was a little difficulty in micturition, but nothing marked, and the retention had been disguised by the fact that there had been a more or less constant overflow. The involuntary micturition was naturally enough misinterpreted by the patient, and was not mentioned until specifically enquired after. The uterus had become retroverted, the tumour sinking down into the sacral concavity, and the pressure and dragging on the neck of the bladder occasioned the retention.

The particulars of this case sufficiently illustrate the nature of the enquiries, and the mode of examination necessary to be made. The case just described is somewhat analogous to others which have been recorded, and particularly resembles one related by Mr. Baker Brown.* It might be said perhaps that the duration of the tumour in the case above related (only three weeks) would at once have settled the question as against ovarian disease; but in some cases it has been found that ovarian disease progresses with extreme rapidity. Kiwisch says, 'We have seen a cyst from the 'size of a fist to that of a child's head, appear in the course of four-teen to twenty-four days, accompanied by severe local and general 'symptoms.'† Further, in dealing with the statements of patients as to the duration of a particular condition, we are always treading on uncertain ground. There was nothing, for instance, in the above case to prove that the duration of the hypogastric tumour dated back from only three weeks previous. It might well have existed, although much smaller, for some time antecedently.

Having, therefore, excluded distension of the bladder from the consideration—a step which should always be taken, and neglect of which may be attended with most disastrous results to the patient, we have in the next place to *determine whether the tumour be ovarian or uterine.*

The distinction between an ovarian and a uterine tumour, the size of the tumour not exceeding that previously stated, is by no means easy, by the abdominal examination alone. The distinction is much easier when the tumour is more considerable in size. As

* *Op. cit.* p. 317.

† Translation by Clay, p. 112.

a general rule, hardness and slow growth of the tumour are against the idea of ovarian disease. Thus a rounded firm tumour, reaching to the umbilicus, and which had been slowly increasing for two or three years or more, would be far more likely to be uterine than ovarian; and a very large tumour in the abdomen of slow growth may be considered uterine, if it be universally hard and firm; if it be soft or give evidence of fluctuation at certain points, it is almost as certainly ovarian.

There are other means, however, to which we can resort in order to satisfy ourselves whether a given tumour in the hypogastric region be uterine or ovarian, viz., the employment of a vaginal examination, and by combining this with an abdominal one. Further, the use of the sound is often of the most essential service in guiding us to a right conclusion.

By means of the vaginal examination we are able, in many instances, to assure ourselves that the tumour above the pubes is continuous with a tumour which we recognise as that of the uterus by means of the vaginal touch. Such is the case, for instance, when the woman is pregnant, or when the uterine cavity is enlarged and distended by fluid or other contents. By pressing upwards from the vagina we can frequently also, under such circumstances, establish the continuity of the two tumours—the vaginal and the hypogastric. The mere fact, however, that motion is thus communicated is insufficient to establish the identity of the two. Thus, when an ovarian tumour is closely applied to and pressing down the uterus, motion would necessarily be communicated to the tumour above by pressure on the uterus below. And sometimes the relations of the uterine orifice below are such that it is no easy matter to determine whether a hard mass felt from the vagina is uterine or ovarian. It is in such cases that the sound is employed with such good results as regards the diagnosis, for by establishing the fact that the uterine canal lies in a certain direction, important deductions as to the nature of the tumour follow.

So important is it that our diagnosis, as made out by an abdominal examination, be corrected and checked, so to speak, by a vaginal one, that a positive opinion should hardly ever be given as to the nature of any case, however clear it may appear to be, simply on the results obtained by the former method of investigation. Mistakes, ludicrous or serious, or both, have not by any means unfrequently followed neglect of this important rule.

Plan now to be pursued in making a Diagnosis between Ovarian and Uterine Tumours.

The determination of the diagnosis of a tumour, which it has been decided is either uterine or ovarian, is a matter which presupposes some knowledge of the pathology and physiology of the uterus and ovaries. The course which it is now proposed to take, in order to facilitate the forming of a diagnosis between ovarian and uterine tumours, is as follows:—1st, to enumerate the various forms of enlargement of the uterus liable to be met with, calling attention more particularly to the features which distinguish them especially as uterine tumours, from a clinical point of view; 2ndly, to give a description of the various forms of tumour met with in the ovaries, here also giving a prominent place to the clinical aspects and peculiarities of the cases; 3rdly, to point out the successive steps by which the diagnosis between uterine and ovarian tumours is to be arrived at; 4thly, a separate chapter will be devoted to the diagnosis of the various forms of ovarian tumours, one from the other.

CHAPTER XII.

TUMOURS TRACEABLE INTO THE PELVIS (*continued*). ENLARGEMENT OR TUMOUR OF THE UTERUS.

Causes of Enlargement or Tumour of the Uterus—General Remarks on the differential Diagnosis. Carcinoma of Fundus Uteri—Tubercle of the Uterus—Osseous or Cartilaginous Tumour of the Uterus—Abscess of the Uterus—Fibro-cystic Tumour of the Uterus—Gaseous Distension of the Uterus—Distension of the Uterus by Fluid; Retention of Menstrual Fluid; Purulent or other Collections of Fluid—Fibrous Tumour and Fibrous Polypus of the Uterus—PREGNANCY; Description of the Physical Characters of the Tumour due to the Gravid Uterus, its Shape, Size, Position; Ballotement; Spurious Pregnancy; various Sources of Fallacy; State of the Skin covering the Abdomen, and Condition of the Umbilicus; Auscultatory Signs; Sounds due to Passage of Flatus, Mother's Heart, Pulsation of the great Vessels, Respiratory Sounds; Sounds of Fœtal Heart, Uterine Souffle, Funic Souffle, Sounds due to Fœtal Movements.

Special Consideration of the Diagnosis of Pregnancy—Estimate of the comparative Value of the different Signs of Pregnancy: General Summary.

IN the present chapter it is proposed to give an account of the various forms of enlargement of the uterus likely to be met with in an abdominal examination, calling attention more particularly to the features which especially distinguish these enlargements as uterine tumours from a clinical point of view. •

The causes of enlargement or tumour of the uterus are the following:—

Simple Hypertrophy of the uterus.

Pregnancy, normal and abnormal.

Uterine polypus and fibroid tumour of the uterus.

Retention of the menstrual fluid (*Hæmatometra*), and other collections of fluid in the uterine cavity (*Hydrometra*).

Gaseous distension of uterus (*Physometra*).

Abscess of the uterus.

Osseous tumour of the uterus.

Tubercle of the uterus.

Carcinoma of the fundus uteri.

Fibro-cystic tumour of uterus.

The least common of these pathological conditions are those

which have been placed last on the list. Carcinoma of the fundus uteri and tubercle of the uterus are very rare. Osseous tumour of the uterus also is very uncommon. The same remark applies to abscess of the uterus. Accumulations of gas in the interior of the uterus are very rarely witnessed. Accumulation of fluid in the uterus, unconnected with pregnancy, do not often come under our notice; in retention of the catamenial fluid, a condition now and then present in young women who have never menstruated, more rarely in others, the uterine tumour due to such catamenial accumulation may attain a very considerable size. Simple hypertrophy of the uterus, although not an uncommon condition, does not produce more than a slight increase in the size of the uterus as felt above the pubes; a tumour reaching beyond two inches above the pubes, might be concluded not to be due to simple hypertrophy of the uterus. The most common conditions met with, and giving rise to uterine tumour, are, pregnancy, fibrous tumour, and fibrous polypus of the uterus. By far the majority of tumours in the abdomen of any considerable size, and which are uterine in their nature, are found to be constituted by the presence of one of these three conditions mentioned; and in practice therefore the diagnosis of these, one from the other, is of the most importance. Here it may be mentioned that the diagnosis of these three conditions, one from the other, is far easier than the diagnosis of one or each of them from certain tumours of the ovaries, as will be presently shown.

With these general remarks we may now proceed to describe more particularly the characteristics of the various forms of uterine enlargement. .

CANCER OF THE FUNDUS UTERI.

When cancer attacks the uterus the most ordinary circumstance is that the cervix and os uteri are the parts affected, and the presence of the disease is revealed by a vaginal rather than by an abdominal examination. In some rather rare instances, however, while the cervix remains apparently sound and healthy, an insidious invasion of the upper part of the uterus, by carcinomatous deposit, occurs. When this is the case, the patient presents some of the constitutional signs of cancer, pain, loss of flesh, &c., and an enlargement of the uterus may be perceivable above the pubes, while no alteration can be detected by a vaginal examination in that part of the uterus which might be expected to present signs of it, viz., the os and cervix. Dr. West met with this affection in

2 out of 120 cases of uterine cancer. Dr. Simpson considers that about 2 cases out of 30 of cancer of the uterus are of this kind. The deposit may, according to Dr. Simpson, be observed, in the outer layer of the middle coat of the uterus, or in the sub-peritoneal or peritoneal coat; or attacking the whole thickness of the uterine walls; or in the mucous or sub-mucous coat of the body or fundus uteri.* In both of Dr. West's cases 'the enlargement of the uterus was very considerable; in one it measured six inches in length, and in the other was nearly as large as the adult head.' Respecting the diagnosis of these uncommon varieties of carcinoma uteri, the following remarks may be made:—the enlargement of the uterus felt above the pubes is, compared with that due to pregnancy, of slow growth, though not so slow as in the case of fibrous tumour or ordinary fibrous polypus. The shape and feel of the tumour varies according to the precise seat and stage of the growth. If the growth be superficial, it is uneven, irregular in shape; if it be internal to the uterus, or interstitial, the tumour is smoother, more uniform. In these respects the facts elicited are not very decisively significant. With respect to the discharges present, in both fibrous polypus and cancer of the interior of the uterus, we may have serous, or offensive or bloody discharges, but in the duration of such discharges, and in their effect upon the patient, we have diagnostic criteria of importance: an ordinary polypus may exist for years with more or less constant discharge of the above characters, and yet the patient may not very greatly suffer, but the cancerous disease is more deadly in its effects, and constitutional derangement, very decided in kind and degree, soon shows itself. Fibrous tumour of the uterus, the physical characters of which as felt through the abdominal wall might, in some respects, resemble those of cancerous tumour, is distinguished from the latter by its comparative innocuity, and by the absence of general indisposition therewith associated. The *duration* of the disease, as will have been gathered from the preceding remarks, is then an important element in the decision. The pain present in cases of cancer is often peculiar in kind and degree, as previously stated; and although pain is frequently present in cases of polypus, yet it is pain of a different kind, less constant and less severe. Lastly, the diagnosis may be summed up in the statement that the patient presents signs of uterine cancer; that a vaginal examination fails, or may fail, to give evidence of it; while a careful

* *Med. Times and Gaz.* Jan. 15, 1859.

examination of the uterus above the pubes reveals the existence of an irregular, or possibly of a regular, tumour which may be of considerable size. It is necessary here to remark that, in ordinary cases of cancer of the uterus, the organ is usually felt to be somewhat enlarged by examination above the pubes; in a few cases the enlargement in question is more considerable.

TUBERCLE OF THE UTERUS.

This is a very rare disease. A good instance of it was recently recorded by Mr. Tomlinson, and has been already referred to (p. 82). In the case in question the uterus was felt to be considerably enlarged above the pubes. The course of the disease was chronic, death taking place upwards of three years from the commencement of the symptoms. The circumstances likely to attract attention in cases of this kind are, the slowly increasing enlargement of the uterus, the presence of more or less continuous discharge (in Mr. Tomlinson's case it was brownish and offensive); absence of the peculiar constitutional affection met with in cancer; absence of a tumour within the uterus as ascertained by vaginal examination. The cases are so rare that it is difficult to lay down more precise rules for their discrimination.

OSSEOUS OR CRETACEOUS TUMOUR OF THE UTERUS.

Cases are very rare, but such have been recorded, in which the whole uterus has been found enlarged and converted into a mass of an osseous hardness. The hardness is generally due to presence of masses of a calculous nature. It is not so very uncommon to meet with partial petrifications occupying limited areas of the uterine walls, but the conversion of the whole uterus into such a mass is exceedingly rare. The hard masses consist of cretifications, the result, perhaps, of tuberculous deposit; in other cases they are probably transformations into a material somewhat resembling bone, of fibrous tumours and growths in the uterine walls.

Cases presenting any one of the changes in question are those of women advanced in life. They are very chronic; the diagnosis rests on the great firmness and hardness of the tumour; but it may be found exceedingly difficult to pronounce positively whether a given tumour be osseous or simply fibrous, for nothing can exceed the hardness and firmness of some long-standing fibrous tumours of the uterus as felt through the abdominal walls. Unless, however, the whole uterus be involved, it probably matters but little

to the patient whether the tumour belong to one or other of the two series.

ABSCESS OF THE UTERUS.

Inflammation of the uterine tissue going on to the formation of pus, and consequent abscess, is very rarely observed, excepting after abortions, after labour, or after operations performed on the genital organs; the attending circumstances are such that there could hardly be any difficulty in deciding on the nature of a tumour due to such a cause. The presence of the tumour would be associated with pain, great febrile disturbance, and symptoms of an acute character. In some rare cases, abscess in the uterus has resulted from decomposition and putrefaction of a retained foetus. Cases of abscess of the uterus in which the purulent collection forms in the uterine wall, or between the uterus and its peritoneal covering, are closely allied, in their symptoms and general features, to cases of pelvic abscess. The only difference is that, in the former class of cases, the tumour appears to be an enlargement of the uterus itself, is more limited, and more definable, than in the latter series of cases.

FIBRO-CYSTIC TUMOUR OF THE UTERUS.

Some particulars concerning this rare, but important, form of disease will be found at the conclusion of the remarks on the diagnosis of ovarian from uterine tumours.

GASEOUS DISTENSION OF THE UTERUS.

The tumour due to gaseous distension of the uterus occupies the middle of the abdomen; it is well-defined, hard, and firm, and it differs from all other uterine tumours in this particular, that the note on percussion is clear and tympanitic. Well-authenticated cases of this affection are not many in number, but there can be no question that gaseous accumulations do occasionally take place in the interior of the uterus. The most common condition under which such accumulation has been noticed is the presence within the uterus of a dead foetus, or portions of the membranes which have been abnormally retained in the uterus after labours or miscarriages. The gas formed in the uterus under these circumstances is the result of the decomposition of the retained matters, it is foetid, and the uterus at the same time may contain purulent detritus. Further, it appears necessary that to produce this gaseous distension of the uterus, the orifice of the organ should,

having been recently open, have become closed. It seems on the whole probable that, first, air must have obtained admission into the uterus; that, secondly, the os must have become plugged up or closed; and that decomposition must have then occurred, and thus given rise to the gaseous distension now alluded to. That air does frequently pass into the uterus immediately after the expulsion of the fœtus, is a fact. It is evident, further, that irrespective of labour or miscarriage, coagula undergoing decomposition in the uterus may generate gas, which may be retained and accumulate in the uterus, though the number of cases coming under this head are very few compared with those previously described. It has been supposed by some that the lining membrane of the uterus may secrete gas, but there is no proof of this. In many of the cases recorded as cases of gaseous accumulation in the uterus, the only proof of such accumulation has been the passage of flatus from the vagina, which has been erroneously supposed to come from the uterus. Recently Dr. Harley made an interesting communication to the Obstetrical Society of London,* and related the particulars of a case where flatus was occasionally expelled from the vagina. He ascertained by experiment that the gas so expelled had been the moment before drawn into the vagina, as he believed, by a spasmodic alternate contraction and relaxation of the recti abdominis muscles. Dr. Gooch mentions a case in which the patient only expelled flatus while not pregnant, the expulsion ceasing when she became impregnated, and he cited this to prove that the flatus must have come from the uterus. This fact, however, affords no absolute proof of the truth of the explanation for which Dr. Gooch contends. It was more probably a case, such as that observed by Dr. Harley, of alternate admission and expulsion of air from the vagina.

Clinically, the uterine tumour due to such accumulation will rarely come before us. The tympanitic tumour, evident in the middle line above the pubes, is continuous with an enlargement of the uterus as felt from the vagina. Menstruation is absent, the enlargement is stationary or progressive. Interference with the performance of the functions of the neighbouring viscera, the rectum and bladder, will be in proportion to the size and extent of the tumour. When the uterus is distended to any extent, the presence of pains, more or less resembling those of labour, might be expected to be observed. These cases might be mistaken for

* *Obst. Trans.*, vol. iv.

simple tympanitis, from which, however, a vaginal examination would distinguish them. The very rare case in which an ovarian cyst is spontaneously evacuated into the bowel, air afterwards entering and distending the cyst, would offer many points in common with that now under consideration.

DISTENSION OF THE UTERUS BY FLUID.

The cases coming under this head are some of the most important with which we have to deal, and their diagnosis possesses great interest. Respecting distension of the uterus by fluid from whatever cause, there is this general remark to be made—that as regards the shape and relations of the organ, the uterus usually expands under the distending force pretty much as in the case of pregnancy. If the distension be at all considerable, the tumour produced by it is readily recognised above the pubes, and also from the vagina. Fluctuation is usually present when the tumour is large, but it is not a sign the presence of which can be greatly depended upon. One form of distension to which the uterus is liable, is that produced by *retention of the menstrual fluid*, in young women who have never menstruated. In women who have menstruated also, menstrual retention may occur in consequence of the *os uteri or the vaginal canal becoming occluded*, as after parturition, or by the presence of tumours in the canal of the cervix uteri. (See ‘Examination of Uterus from Vagina.’) Then there are cases in which *purulent collections* from various causes take place in the uterus, or in which fluid of a more or less *serous* character is found distending the organ. The latter class of cases are those which are more particularly described by authors under the term ‘hydrometra.’ Lastly, cases of *pregnancy*; for although, normally, the amount of fluid in the uterus under such circumstances does not entitle the ‘enlargement of the uterus due to pregnancy’ to be considered in this place, yet occasionally the quantity of fluid present in the uterus, together with the *fœtus*, is very considerable indeed, and it has even been sufficient to obscure the diagnosis of pregnancy in some instances.

The diagnosis of these various forms of distension of the uterus is generally to be made out by a careful consideration of the attending circumstances and of the history of the case. They have all of them this in common, that menstruation is absent, a necessary condition of fluid distension of the uterus being closure of the outlet for the menstrual fluid. [The only possible exception, and that only an

apparent one, to this statement, is in the case of cancerous disease of the lower part of the uterus occasioning purulent distension of the cavity above, and at the same time, possibly, giving rise to a sanguineous discharge below.] The symptoms produced by menstrual retention in young women who have never menstruated have been fully described at p. 32. The physical signs are identical with those of early pregnancy, so far as the abdominal examination is concerned, but the vaginal examination throws light on the matter by revealing the presence of an imperforate hymen or other occluding barrier to the escape of the menstrual secretion.

Enlargement of the uterus due to menstrual retention in women who have menstruated does not very frequently come before us clinically, for the retention rarely proceeds to such a degree as to give rise to a considerable enlargement of the uterus. The following interesting case, recently recorded by Prall, of Hamburg, may here be quoted. The patient, æt. 43, previously regular, ceased to be so, and simultaneously symptoms of pregnancy set in. At the end of three months the uterus was enlarged, the os occluded, and the uterus contained a quantity of bloody fluid. It was imagined that the case was one of pregnancy with retroversion of the uterus; attempts were made to reduce this, but the force used had the effect at once of relieving the patient and showing the nature of the condition present. The pressure employed forced the blood through the occluded os uteri.* Dr. Hall Davis has recently recorded † a case of the same kind. A patient had not menstruated at all during the year and a half following a severe labour. The uterus was as large as a gravid uterus of four months; no opening could be detected. By use of a canula and trochar, treacly menstrual fluid was evacuated. After a severe attack of pyæmia she finally recovered and menstruated regularly. That partial retention and slight distension of the uterus does occur more commonly than is usually supposed has already (see p. 119) been attempted to be shown, but there can be no doubt that cases like those above quoted are very rare.

We may have purulent distension of the uterus from foetal remains undergoing decomposition in the uterus, or from cancerous disease of the organ, for cases are on record in which pregnancy having proceeded regularly up to a certain point, no delivery of a foetus has occurred. Such may be the origin of a purulent collection in the uterus. The so-called cases of *hydrometra* are also

* Schmidt's *Jahrb.*, vol. cxvi. p. 65.

† *Obst. Trans.*, vol. iv.

rare, and their diagnosis rests chiefly on the facts that the uterus is distended with fluid, that this is not due to pregnancy, that menstruation is absent, and that the course of the affection is slow and chronic. Moreover, it has been observed chiefly in women somewhat advanced in years. The degree of the distension in some recorded cases has been very considerable. Thus, in a case recorded by Dr. A. T. Thomson,* the uterus contained eight quarts of a dark-brown coloured fluid. These cases would be distinguished from cases of ovarian tumour by the fact that the uterus is the organ enlarged, also by the absence of menstruation, though this latter would be no guide in a woman past the climacteric age. Judging from recorded experience, the true nature of the case might be very readily overlooked. Distension of the bladder could hardly be confounded with it; if any doubt existed, the use of the catheter would be the means of removing it.

In cases where the woman is pregnant, but the quantity of liquor amnii is very excessive, it is just possible that on the first view of the case some difficulties might present themselves in the way of the diagnosis. A slight investigation of the history of the case, its progress and symptoms, would very shortly indicate the true explanation of the matter, and the signs of pregnancy revealed by a vaginal examination and otherwise, would generally be conclusive as to the presence of that condition. Cases of this kind have been occasionally rendered additionally obscure by the presence of dropsical effusion in the cavity of the abdomen.

FIBROUS TUMOUR AND FIBROUS POLYPUS OF THE UTERUS

These two affections may be conveniently considered together. Fibrous growths may be found in the cavity of the uterus, distending it to an enormous size; they may occur in the wall of the uterus, near the lining membrane, or near the peritoneal covering. It appears to depend on the accident of their position as to whether the cavity of the uterus be enlarged by their presence or not. When they grow within the uterus, attached to it only by a pedicle, more or less broad, they naturally distend the cavity to a degree proportionate to their size. When, on the other hand, they grow outside the uterus under the peritoneal coat, the cavity of the uterus may remain of the normal size, may become even diminished in capacity. Between these two extreme cases we have, in practice, all gradations. The term 'fibrous tumour' or 'fibroids'

* *Med.-Chir. Trans.*, vol. xiii. pt. 1. p. 170.

is usually applied to all those fibrous growths which are not enclosed in the cavity of the uterus, or which, being within the cavity, have not that kind of attachment justifying the use of the word 'pedicle.' The division between pedunculated fibrous growths or polypi, and sessile fibrous growths or fibrous tumours, is thus an arbitrary one.

The history of a fibrous growth of the uterus of considerable size is always one extending over some time, generally several years. The physical characters are peculiar, the growth has a dense firm consistence and a smooth rounded exterior. It very frequently happens that more than one growth is present in the same case. Occasionally a great portion of the exterior of the uterus is beset with fibrous tumours of various sizes, some pedunculated, some sessile, while the uterine wall itself contains others embedded in its thickness and producing apparent enlargement of the whole organ. The size to which these fibrous growths attain in certain cases is enormous. In a case which I have related in the '*Obstetrical Transactions*'* the tumour, which grew from the uterus near the cervix, measured, when removed from the abdomen, sixteen inches in diameter and forty-four inches in circumference, and its weight was forty-two pounds. The patient, who had been under the care of my friend, Dr. Uvedale West, of Alford, died almost suddenly, from an attack of hæmorrhage, at the age of 53, and the tumour had been growing for ten years. Fibrous growths, assuming the form of polypi and included in the uterine cavity, do not attain to quite such an extreme size as in the case just mentioned.

A hard, firm, resisting, well-defined tumour, involving the uterus, reaching as far as, or beyond, the umbilicus, which has been growing for three or more years, will, if uniform and symmetrical in shape, probably prove to be a fibrous polypus of the uterus, but if there be a want of symmetry about the tumour we have probably to do with a fibrous growth which is not within the uterine cavity. More generally we are able to recognise this latter fact at once, judging by the unevenness of the surface of the tumour felt through the abdominal parietes, while in other cases it is still more evident from the circumstance that the fingers recognise the presence of rounded, knob-like masses, which are fibrous tumours growing from the exterior of the uterus. Sometimes these growths are pedunculated, and then they are movable to an extent varying with the length of the pedicle.

* Vol. ii. p. 240.

It will thus be seen that when the case before us dates back for any considerable time, the diagnosis, up to a certain point, is comparatively easy; the firmness and density of the tumour being peculiar and characteristic. The slow growth of the tumour, and its firmness and solidity, separate it from the ordinary forms of ovarian tumour, but there are some forms of ovarian tumour with which it may more readily be confounded. In cancerous enlargement of the uterus the progress is less chronic than in fibrous tumour, moreover cancer is often present in other organs also. There are other considerations which are equally significant in the diagnosis of fibrous growths. When the fibrous growths are external to the cavity of the uterus, the symptoms are often very slight, and the general health of the patient may be unaffected, unless the shape or position of the tumour be such as to mechanically interfere with the evacuation of the bladder or of the rectum. In the early stage of the growth of such tumours there may be, however, mechanical derangements, these being entirely absent at a later period when the tumour has risen out of the pelvis into the abdomen. If, on the other hand, the uterus be enlarged *together with* the tumour, as it necessarily is when the tumour is enclosed within it, the symptoms are almost always more severe and such as to attract attention at an early period. Profuse menstruation, hæmorrhages, serous discharges, more or less constant pains and discomfort of various kinds, which by their association and long continuance not rarely reduce the patient to a very low debilitated state, are present under such circumstances; and a slow-growing, hard, symmetrical tumour, felt above the pubes in a patient with symptoms such as those described, generally proves to be a large polypus of the uterus. The only condition capable of closely simulating this condition is internal cancer of the uterus—a very rare disease and one which might be expected to have a less chronic course than fibrous polypus. The state of the lower segment of the uterus affords valuable diagnostic information in cases of hard uterine enlargement. When a polypus is present, the examination of the os, and through this opening of the interior of the uterus by means of the uterine sound, generally gives conclusive information on this point. Slight consideration will be sufficient to show that between fibrous tumours situate in the wall of the uterus but partly projecting into the cavity, and fibrous polypi, the diagnostic signs would not be very decided. The symptoms presented by the patient give, however, some material assistance. Thus, as observed by Scanzoni, in the case of

fibrous tumours growing near the cavity but interstitial in character, the pains experienced by the patient are generally more severe than when there is a polypus present, while, at the same time, the amount of hæmorrhagic loss is generally much less considerable in the former than in the latter case.

That solid tumours of the ovaries may, under certain circumstances, present physical signs very closely resembling those present in the case of fibrous tumours of the uterus, has been just observed. The greatest amount of difficulty is in deciding between a tolerably large fibrous tumour pedunculated, and, to a certain extent movable independently of the uterus, and some solid tumours of the ovary, both being chronic in their course, while the physical inconveniencies produced may be identical in the two cases. Practically, it does not often happen that the diagnosis in question is of extreme importance. The diagnosis of ovarian tumours of which the contents are chiefly fluid, from fibrous tumours of the uterus, is more interesting, and at the same time more easy, the presence of fluctuation and other characters, to be alluded to presently, giving important diagnostic criteria.

PREGNANCY.

To determine whether an abdominal enlargement be or be not due to the presence of pregnancy, is very frequently the chief object of an examination of the abdomen, and the solution of the question is, as has been remarked more than once, a matter of the greatest possible interest and importance. Many of the difficulties more ordinarily presenting themselves in ascertaining whether, in the particular case before us, the enlargement is due to pregnancy or not, have been cleared away by what has been already said on the subject. It is necessary to remind the reader that not one of the precautions mentioned some pages back as to placing the patient in a proper position, as to the previous evacuation of the bladder and rectum, &c. &c., can be safely neglected, if we are to make a complete and successful investigation of a case of suspected pregnancy.

Before pointing out the diagnosis more particularly, it is necessary to describe the physical and other characters of the tumour constituted by the gravid uterus under ordinary circumstances. A description of these physical and other characteristics will include a reference to the nature of the feel communicated by the tumour to the fingers, its size, its position in the abdomen; after

which those signs, most important of all, derived from the employment of auscultation, will have to be considered.

The Feel of the Tumour due to the Gravid Uterus.—It is during and after the fourth month that we can feel the gravid uterus above the pubes. Up to the fifth month the tumour so felt is tolerably firm, not sensitive, giving the impression of a rounded, smooth, fleshy mass. After this period the tumour is usually felt to be softer, this being due to the presence of fluid within it, and the degree of the softness will vary with the amount of the fluid. There is often an obscure fluctuation perceivable. Soon after the fifth month harder masses or nodulations may be felt within the tumour, which gradually become more pronounced as it grows, these being the limbs or other parts of the body of the fœtus, which may come into contact with the uterine wall. If, as occasionally happens, the amount of liquor amnii is very small, the uterine tumour is felt to be everywhere hard and more resistant, but the elevations and depressions corresponding to the irregularities presented by the fetal surface are still to be detected. Usually, it is necessary to press inwards with the point of the finger to detect the elevations in question, but now and then both the abdominal and the uterine walls are so lax that the members or other part of the fœtus are more easily felt on application of the hand.

In cases where the uterine tumour is not to be felt above the pubes, from presence of fat, from resistance, or other causes, there is a peculiar hardness and fulness of the region in question. The importance of engaging the patient in conversation while endeavouring to ascertain the physical characters of the tumour should be now kept in view. It will be found exceedingly useful also to make the patient inspire and expire very deeply several times in succession, while the hand rapidly follows the movement of the abdominal walls. Often, in this way, a tumour becomes recognisable, the existence of which would be otherwise problematical.

As regards the surface of the tumour due to the gravid uterus, it is usually perfectly smooth and uniform (unless when so lax that the projecting angles or parts of the fœtus within cause irregularities); but cases may occur in which there are fibroid tumours growing externally to it, giving a nodular character to the surface. It would be important not to overlook such a possible coexistence of fibrous tumours of the uterus with pregnancy. In cases of hydatidiform pregnancy, the surface of the uterus is remarkably hard and resistant, but the hardness and resistance are uniform.

The discovery of the limbs or other parts of the foetus through the abdominal walls is not usually available as a diagnostic sign of pregnancy until a late period, when other equally significant data are also obtainable. But there are other signs of pregnancy obtainable at an early period, by simply feeling the tumour, which are of great importance—viz. the *feeling of the movements of the foetus within the uterus*. We have elsewhere (see p. 152) considered the movements felt by the mother, and their value as signs of pregnancy. The data now under consideration have a higher value. During the fifth month frequently, but after that time in the majority of cases, if the hand of the observer be laid smoothly over the abdomen and the suspected tumour, and gently pressed against it, a sharp, slight, but decisive tap is felt, due to the movement of the foetus within. This is felt with more or less ease in different cases. The woman may be undoubtedly pregnant, and with a live child, this sign being yet undiscoverable; but if a little patience be exercised, by manipulation and pressure the slight impulse will be perceived. It is often felt immediately on applying the hand, and is only felt again on removing and re-applying it. It is capable of being simulated by that sudden and spasmodic contraction of the recti muscles occasionally liable to be set up by the application of the hand in hysterical subjects; possibly also by the peristaltic movements of the intestines. The celebrated Joanna Southcott appears to have deceived her medical attendants by thus contracting the recti muscles. They believed that she really was pregnant. It has been recommended that the hand should be dipped in cold water in order more easily to excite foetal movements, but this is unnecessary. The following remarks of Dr. Tanner are very much to the purpose:—‘I would especially mention that the cold diminishes the acuteness of the sense of touch, while it is very likely to induce spasmodic contractions of the recti muscles, which are almost certain to be mistaken for foetal movements.’*

There is still another sign of pregnancy derivable from palpation of the tumour through the abdominal walls, viz. hypogastric percussion or ballottement. The patient is to be placed on the side, or, as Dr. Montgomery recommends, on the knees, ‘with the shoulders depressed, so that the foetus may be caused to gravitate towards the fundus uteri, which is also brought into more complete contact with the abdominal parietes.’ The fingers are then to be

* *Signs and Diseases of Pregnancy*, p. 76.

pressed against the most dependent part of the tumour firmly but gently, and then very suddenly this pressure is to be withdrawn. In the act of withdrawing the pressure the fœtus is felt to fall against the retiring finger, and this constitutes the sign in question. It is identical with the internal ballottement previously described. (See p. 236.) Without placing the patient in this position, this external ballottement is often practicable when the pregnancy is far advanced; that is to say, the patient lying on the back, pressure is steadily made by one hand on one side of the uterus, and manipulation by the other hand is performed on the opposite side of the uterus as above directed.

The value of this ballottement as a sign of pregnancy is great, but it is possible that an inexperienced observer might be led into error by it. Thus if the abdomen contained a solid pedunculated movable tumour, together with ascitic effusion, the sensation described above might be communicated. The internal ballottement from the vagina is not so liable to be simulated, and indeed if the previous instructions have been duly attended to, it is not possible to mistake the external ballottement due to a fœtus within the uterus for anything else.

The Size and Position of the Tumour constituted by the Gravid Uterus.—Under ordinary circumstances the gravid uterus is, at the end of the third or beginning of the fourth month, so large that the fundus of the uterus can be perceived above the brim of the pelvis, and during the succeeding months, unless interfered with by some abnormal occurrence, the uterus rises progressively higher and higher. In the sixth month the upper border of the uterine tumour is as high as the umbilicus. In the seventh month it reaches two inches or more above this point, and at the end of the eighth month it reaches the ensiform cartilage. After this time, that is to say during the ninth month, although the uterine tumour increases in size, this increase does not show itself so much in the upward direction as laterally and anteriorly; and during the last week or two there is, more often than not, an actual sinking of the tumour to a slight extent.

Then as regards the *position* of the tumour, it must not be supposed that the gravid uterus rises up in the median line and maintains this position throughout the whole period of pregnancy. This is a very common error, and one which has frequently led to misconception and even worse. The fact is that the uterus does at first, and during the first two or three months, occupy a median position—until it becomes bulky and rises into the abdomen. But

once in the abdomen it generally occupies for the next two months—that is to say, speaking broadly, during the fifth, sixth, and part of the seventh months—a lateral position, being most frequently found on the right side of the abdomen. The degree of the lateral displacement varies in different cases, it being greater in some cases than in others, and when the abdomen is large, the intestines tympanitic, and the uterine tumour small in proportion to the period of the pregnancy, the tumour may be, and has been, overlooked, owing to the observer not being aware of this normal lateral deviation.

We may now consider for a moment the indications to be drawn from the size and position of the tumour in the abdomen, as to the existence or absence of pregnancy in the case before us. The most important circumstance to bear in mind in deciding for or against pregnancy—size and position of the tumour alone considered—is the *relation which we find to subsist between the size and the duration of the tumour*. Thus we examine the abdomen on a particular day, and find a tumour extending to half way between the pubes and umbilicus: and examining the same case two months later, we find the upper border a little way above the umbilicus. If other signs of pregnancy be present, or rather if they be not absent, such an amount of growth in such a space of time, in itself favours the presumption that the case is one of pregnancy. This evidence, therefore, has its value. Again, supposing we have a case before us which on other grounds—such as absence of menstruation for five months, &c. &c.—we conclude *may* be one of pregnancy, and on examination we find that there is absolutely no tumour to be detected above the pubes, this would be exceedingly important in a diagnostic point of view, because, if the patient were five months pregnant, there should be a tumour discoverable in the hypogastric region. To put another case, supposing we find menstruation absent for six or seven months, and a tumour reaching to the umbilicus is detected, while no increase in the size of the tumour is found to have occurred on examination of the tumour two months later, this would be presumptive evidence against pregnancy.

Considered alone, then, the size and duration of the tumour have significance. Taken alone, no absolute conclusion as to the presence of pregnancy can be drawn therefrom, but we can frequently pronounce very positively, from the result of our examination, that there is no pregnancy. And in point of fact, the larger number of cases that come before us are cases in which the

determination of this single point is quite sufficient to decide the question which has to be decided. Thus a woman is suspected to be pregnant, and it is known that if she be pregnant the pregnancy must have advanced, say six months. We examine and find absolutely no tumour in the abdomen, which is possibly fat and tympanitic. Positively, and without going a step further, we can say, with this fact before us, that pregnancy is impossible—pregnancy of the duration supposed, at all events.

To return from this digression: we derive important indications from the size of the tumour as to what further procedures it is necessary or advisable to take to ascertain the nature of a case in which pregnancy is suspected. If we find no tumour above the pubes, to examine the patient *per vaginam* will give us no *certain* information whether the patient be or be not pregnant, in the majority of cases at all events; but if we find a tumour reaching to the umbilicus, a vaginal examination should give exceedingly important indications for the diagnosis, and would therefore be had recourse to.

A very interesting account might be here given of the many cases in which practitioners—some of them men of high standing and reputation, have been led to form erroneous conclusions respecting the existence of pregnancy. In many of such cases the mistake has been committed owing to the patient's statements having been attended to, and either no examination, or a very superficial one, instituted. The account given by the patient and the symptoms observed not unfrequently very closely resemble those present in pregnancy; so much so indeed, that by many writers the condition has received a special name, 'spurious pregnancy,' 'pseudocyesis.' (Good); and the symptoms present under these circumstances may be such that they deceive even patients who have had considerable experience in child-bearing. Accounts of such cases will be found in most modern text-books—Montgomery, Tanner, &c. The latter author thus well describes a typical case:—'We shall find the following succession of phenomena occurring possibly in a woman about forty-five years of age, the mother of a family, but who has not been pregnant for some six or seven years:—the catamenia have either ceased or become irregular, or the flow comes on at the proper period, but is very scanty; the abdomen began to swell from the pubic region, in the same gradual manner as in pregnancy, but the enlargement is seen to be more diffused when the patient lies on her back than it is in true pregnancy, and there is an appearance of unusual constrict-

‘tion around the lower ribs or over the diaphragm; the breasts have become painful and enlarged, blue veins are seen traversing their surface, the areola is darkened and a serous fluid resembling milk is secreted, and escapes on pressure from the orifices of the milk ducts; the digestive organs are disordered, there is a capricious appetite, a frequent sense of nausea, with morning sickness, salivation and diarrhœa alternating with constipation; there is muscular debility, an excitable condition of the nervous system, cramp and retraction of the leg, with a change in the hue of the skin; the veins of the lower extremities have become varicose; and the patient is sensible of movements in the abdomen, which she asserts can only be those of a live fœtus, though if closely questioned she will allow that they are not altogether identical in character with such as she has felt on occasions when really pregnant. As these movements are at least partially due to the passage of flatus from one portion of the intestine to another, they are appreciable by a second party, who therefore confirms the patient in her erroneous views.’* It is hardly conceivable how closely in fact the symptoms may resemble those of pregnancy, and the only safe rule to be followed is never to consider the diagnosis as actually established, unless some physical sign on which we can place reliance as a sign of pregnancy be detected. What these reliable signs are will be pointed out in their due order. The foregoing observations apply to ordinary cases. Here, however, must be mentioned a few of the more important exceptional cases, in which deductions, drawn as directed, might prove fallacious.

Thus, a woman ceases to menstruate, there is no menstruation for a period of three months; at the end of the three months she becomes pregnant, and three months later she informs her medical attendant that she is certainly six months pregnant. An examination is made, but no tumour is detected above the pubes, and the erroneous opinion is given that the patient is deceived, and that she cannot be pregnant. Cases of this kind are not very uncommon. Another instance is that in which a woman becomes pregnant, the fœtus dies (at the age, for instance, of three months), but is not expelled. The woman does not increase in size, and for this reason the case may be supposed not to have been a case of pregnancy at all. This case is not a common one, however. Another is that in which the uterus having become impregnated grows with inordinate rapidity, and we find the uterine tumour

* *Op. cit.* p. 127.

very much larger than can be accounted for on the patient's statement of the history of her case. A very instructive instance of this kind recently fell under my own observation. The patient, aged 28, had been married three months, was last unwell the week previous to her marriage. Three weeks before I saw her, she experienced a slight strain in getting over a stile, and dating from that period there had been a slight 'show.' For a fortnight she had been treated as for an impending miscarriage. The day before I saw her, a severe flooding occurred, soon after which I was requested to visit her. On seeing the patient, I was struck with the great size of the abdomen; a tumour, evidently the uterus, extended to two inches above the umbilicus. The first impression produced on my mind was that the pregnancy must have advanced farther than the time stated—three months. On passing the finger, and subsequently the hand, into the os uteri, the organ was found distended with a mass sufficient to half fill a wash-hand-basin, and composed of an ovum which had undergone the hydatidiform degeneration.* The facts of this case bear out the observations of Montgomery and other writers, that in this peculiar affection, an unusually rapid increase in the size of the uterus may be observed, a rate of increase not observed in normal pregnancy. Dr. Moorhead had still more recently recorded a case in many respects resembling the above.†

In cases of retroversion of the gravid uterus there is a fallacy liable to arise in reference to the diagnosis, although other circumstances usually lead to the detection of the real nature of the case. The tumour which should be present above the pubes is then absent, but it is usually replaced by another—the distended bladder. And it is just possible that the observer, finding a tumour above the pubes answering in position, in size, and in shape, to the tumour expected to be found there, might make an important error in diagnosis. The urinary difficulties, the extreme pain and tension in the pelvis, and the other symptoms usually present, generally, however, attract attention, and point out that there is something about the case very unusual at all events. A vaginal examination would at once enable us to explain the nature of the condition present.

Lastly must be considered those cases in which extra-uterine pregnancy is present. These cases are not very common,

* The case is more fully reported in the *Lancet*, 1862, vol. ii, p. 369.

† *Lancet*, 1863, vol. i., Feb. 21st.

but the symptoms observed under such circumstances are generally such as to occasion more or less obscurity in the diagnosis. The more common case is that commonly known as Fallopian pregnancy, the foetus being enclosed in one of the Fallopian tubes. The less common case is that in which the foetus is developed in the abdominal cavity. The tumour presented to the touch in such cases may be situated in the middle line, but more usually it is to one side. Speaking generally, there is little in the tumour itself which is characteristic or which would enable us to distinguish between these cases and cases of normal pregnancy, unless the nature of the case were suspected, and special care taken. The accompanying symptoms are, however, usually peculiar, and to these we must look for aid in the diagnosis. It more frequently happens that one of the terminations of this abnormal pregnancy has arrived before the diagnosis has been made out. The terminations are various. Thus the foetus may grow to its full development, then die and remain in the abdomen, or it may burst from the cavity in which it is enclosed (whether the Fallopian tube or a cyst) into the abdomen, before arriving at full development, occasioning in the latter case often frightful hæmorrhage into the abdomen and sudden death to the mother. Or the death of the mother not ensuing, the foetus becomes encysted, and remains enclosed in the abdominal cavity. When the foetus is in the abdominal cavity, this being its primary or its secondary location, it may there remain for many years, giving rise to no particular inconvenience; or after a variable time, a process of suppuration may be set up, in the course of which the remains of the foetus are expelled, through a fistulous opening in the abdominal walls, into the intestinal canal, or into the bladder.

A woman, the subject of extra-uterine pregnancy, may present no symptoms of an unusual character up to a considerably advanced period of gestation. Such may, however, set in at a much earlier period, and this depends, partly at all events, on the location of the foetus. The symptom which in some cases first attracts attention is the fact that the patient, though supposed to be pregnant, has what she considers to be a catamenial discharge. This point has been already alluded to (p. 40). Discharges occurring in a pregnant woman should lead us to investigate the case more particularly. One of the most frequently observed symptoms of extra-uterine pregnancy is presence of pains of a dragging, sharp, character in the pelvic region, the abdomen being often also tender to the touch. Yet there is nothing very

decisively significant in such symptoms, for patients who are the subjects of normal pregnancy not uncommonly present symptoms such as those which have been described. And if the patient be examined *per vaginam*, we usually find the os uteri presenting characters such as are present in normal pregnancy. The use of the sound would of course inform us whether the uterine cavity were empty or not; but there is this difficulty in the use of the sound in the diagnosis, that it is only safe to use it when we are absolutely sure that the uterus does not contain an ovum. Practically, the sound is of little service in the diagnosis.

Other interesting facts relative to the course and termination of cases of extra-uterine pregnancy might be given, but these cases are of a purely exceptional character, and occur too rarely to interfere materially with our diagnosis of tumours in the abdomen. In the recent work of Dr. Tanner will be found an extended and complete account of the subject. (See also 'Examination of the Vagina.')

State of the Skin covering the Abdomen, and Condition of the Umbilicus.—Under certain circumstances, various peculiarities in the condition of the skin covering the abdomen, and of the umbilicus, have diagnostic significance and value.

The most important peculiarity in question is a change observed in the greater number of cases of pregnancy. There is found 'a coloured line of about a quarter of an inch in breadth, extending generally from the pubes to the umbilicus, but not unfrequently thence to near the ensiform cartilage; its hue is some shade of brown, but sometimes partaking of the yellowish tint of ochre, and sometimes amounting to a full-bodied dark amber.' (Montgomery.) Around the umbilicus too, a dark-coloured disk is often found, which Dr. Montgomery terms the 'umbilical areola.' The two may, and often do, exist together, but the umbilical areola is considered by Dr. Montgomery as of higher value as a positive indication of pregnancy than the dark abdominal line. These changes in the skin above and round the umbilicus are not found in all cases of pregnancy; they are not found equally developed in different individuals at the same period of pregnancy; they are most marked in dark women; they are less to be depended upon as diagnostic of a second than of a first pregnancy. Dr. Montgomery attaches very considerable weight to these changes as diagnostic of pregnancy. His words are:—'The dark abdominal line is an evidence of pregnancy entitled to much consideration, and has considerable value as a corroborative indication; if it

‘be accompanied by the umbilical areola, I believe we have a ‘decisive proof of pregnancy.’*

It may here be added, that as suggestive of the idea of pregnancy, the presence of these discolorations must be regarded as very important. If, for instance, we have to examine the abdomen of a patient, and find it enlarged and presenting the discoloration such as described above, this of itself would suggest to us the view that the enlargement was due to pregnancy. The young observer must be cautioned, however, that until he has actually acquainted himself with the nature of the discoloration due to pregnancy, by inspection of some few undoubted cases, he will not be in a position to make use of this means of diagnosis.

Lastly, the sign in question has a certain amount of value in medico-legal cases, where there is a doubt as to whether the woman has been recently delivered of a child or not. In a woman suspected of having given birth to a child three or four days previously, the presence of a well-marked abdominal line and umbilical areola would be very strongly confirmatory of the suspicion. Its absence would not equally prove the negative, however, especially in the case of a woman with light hair.

Auscultation of the Abdomen.—It need hardly be observed, that in the employment of auscultation we have a means of diagnosis, in cases of suspected pregnancy, of the greatest possible value and importance. Every student of medicine should diligently prepare himself for making use of this means of diagnosis by practising it on all occasions.

It is now necessary to give an account of the sounds heard on auscultation of the abdomen, 1, under ordinary circumstances; 2, when pregnancy is present; to indicate the value of the latter as diagnostic of pregnancy; and to point out how, and what, fallacies are likely to be encountered.

A few words first, however, in reference to the method to be pursued in thus investigating the condition of the abdomen. For very obvious reasons the stethoscope should be preferred to the application of the ear directly to the abdominal parietes. Some care is necessary in adjusting the stethoscope so as to be able to listen easily and with success. The abdomen must be quite uncovered, though a practised observer may allow a very thin handkerchief to be interposed, if it appear advisable. The patient must be lying down, and the abdominal walls relaxed by instructing

* *Op. cit.* p. 166.

her to draw up the knees. The observer, standing on the patient's right side, holds the stethoscope with the left hand, grasping it firmly close to the end which is to be applied to the abdomen. The stethoscope is then firmly, gently, but steadily pressed inwards over the spot to be examined, and there maintained while the ear is applied. When the abdomen is tight, it will often be impossible to hear the foetal heart, unless these precautions are attended to; and, indeed, it is sometimes necessary to press the end of the stethoscope inwards a considerable distance, to obtain the desired result. This is particularly the case when there is a tolerable quantity of liquor amnii in the uterus, when there is any fluid in the abdomen covering the tumour to be explored, when intestines are interposed, or when the walls of the abdomen are unduly loaded with fat. Unless the stethoscope be held as directed, it is apt to roll about over the surface of the uterine tumour. The employment of sudden force is very objectionable: the pressure of the stethoscope inwards, when necessary, should be slow and gradual. The examination must be conducted in a quiet room.

The sounds which may be heard on applying the stethoscope to the abdomen of a woman who is not pregnant, may be confounded with those due specially to pregnancy, and *vice versâ*. The sounds coming under the first head are—*a*. Sounds produced by passage of flatus from one part of the intestines to another; *b*. Sounds due to pulsation of the heart; *c*. Sounds due to pulsation of great vessels in abdomen, in aneurisms of the abdomen, &c.; *d*. Sounds due to respiration. Now, respecting the sounds due to motion of flatus, &c., within the intestines, a very little practice will prepare the observer to at once recognise them. Respecting the sounds due to pulsation of the heart, some important facts are to be remembered. It has been occasionally found that the beats of the mother's heart were quite audible very low down in the abdomen, and there are cases on record in which, the heart beating with unusual rapidity, e.g. 120—130, and heard about the neighbourhood of the umbilicus, these pulsations have been mistaken for those of the foetal heart. This shows the necessity for counting the pulse of the patient before employing auscultation. The sounds proceeding from the great vessels, &c. of the abdomen, will not be described just now, as they will be more fully considered presently. Lastly, the sounds produced by the respiration of the patient are in rare instances transmitted to that part of the abdomen likely to be examined in cases of suspected pregnancy.

Next as to the sounds heard in cases of pregnancy. These are—

a. Sounds produced by pulsation of the foetal heart; *b.* The placental or uterine souffle; *c.* Sounds due to pulsation in the funis accidentally pressed upon—*funic souffle*; *d.* Sounds due to the movements of the foetus. Each of these requires a separate description.

a. Sounds of Foetal Heart.—If the patient be advanced in pregnancy, to the seventh or eighth month, and the circumstances of the case are ordinary ones, the foetal heart is usually heard to beat over a space comprising three or four square inches of the abdominal surface, this spot being situated to the left of the umbilicus and a little below this point, or, as it is generally stated, midway on a line drawn from the umbilicus to the anterior superior spine of the ilium. The situation in which the sound is heard will vary according to circumstances. Thus, if heard at the very earliest moment at which it is audible, the stethoscope would be applied in the middle line just above the os pubis; as pregnancy advances, the point of maximum intensity of heart's beat would travel upwards, and to the left. The precise modification of situation here indicated would be observed only in normal cases. Again, the locality is affected by the position of the foetus *in utero*. Generally speaking, when pregnancy is far advanced, the foetus lies with its head downwards, its back to the left side, and it is through the back of the foetus, which is made by pressure of the stethoscope to come into contact with the uterine wall, and the latter with the abdominal wall, that the foetal heart-beat has to be conducted, in order to reach the ear of the observer. If the foetus be differently placed in the uterus, if the back be turned to the right side—the next most common *circumstance*—then the heart-beat is heard below and to the right of the umbilicus. And if the foetus be so placed that the breech is lowest in the pelvis, the heart-beat is heard to the right or left of the umbilicus, according to circumstances, but *above* it—that is to say, supposing the pregnancy to be pretty far advanced. Thus it will be seen that, pregnancy being far advanced, there are four points at or near which the foetal heart-beat may be expected to be heard:—most commonly to the left and below the umbilicus; next in order to the right, but still below the umbilicus; next in order above, and to the right of umbilicus; next above, and to the left of the umbilicus. It is hardly necessary to remark that, at the period when the uterus lies to one side of the abdomen, the situation at which the foetal heart is heard will be correspondingly modified.

Next as regards the nature of the sound itself, as heard by means of the stethoscope. The sound is like that of the heart of a child

in miniature—it is a double sound, or rather a succession of a pair of sounds, the one rapidly following the other. They have ‘generally received the familiar name of tic-tacs, from their resemblance to the sounds of a watch’ (Montgomery). It is scarcely possible to mistake this peculiar sound for anything else, and *vice versâ*: the sound is one *per se*. Its force and intensity are liable to variation: thus, it is very weak and feeble when first heard, and acquires strength as pregnancy advances. But the *rapidity* of the foetal heart-beat, the foetus being healthy, remains almost constantly the same up to the time when labour has fully set in; and this fact has been established by the observations of several eminent obstetric auscultators, the most recent being Hüter.* The average rate of the foetal pulsation, according to Hüter, who has made 1,195 observations on the subject, is 132. In 10 per cent. of his cases it amounted to 144, in 83 per cent. to 132, in 7 per cent. to 120, and the higher figure was due to the presence of a disturbing element—movements of the foetus—in most of the cases. It may here be mentioned that in practice it is found very convenient to follow the method of Schwartz in counting the foetal pulse—that is to say, to reckon the number of beats in *five* successive seconds, instead of the ordinary method of counting the number of beats in fifteen seconds. Thus, the ordinary foetal heart-beat is 11 for five seconds, mounting to 12 and descending to 10 in exceptional cases. The statement of Montgomery is, that the pulsations ‘vary in number from 120 to 160; but the limits are in general between 130 and 150.’ This does not really differ from the figures given more recently by Hüter. The rate of frequency is affected by certain circumstances, as previous observers had noticed; but Hüter gives more precise indications on this point. His general results are, that, ordinarily, fluctuations in the maternal have no effect on the foetal pulse; that when the mother is the subject of severe inflammatory disease, the foetal pulse may be permanently increased in frequency; that movements of the foetus always accelerate the foetal pulse, this elevation being transitory. Frankenhäuser has broached the theory, that the frequency varies according to the sex of the foetus—that the foetal pulse has a low average when the foetus is of the male sex, and a high average when of the female sex; the average number for males being 124, the average for females 144. The truth of these conclusions has been tested separately and independently by Breslau, Hennig, and

* *Monatsschrift für Geburtsk.* Sup. vol. for 1861.

Haake, whose observations, made on an extensive scale, do not confirm the theory in question. Still more recently, however, Steinbach has made further observations, with a similar object, in 56 cases. Out of the 56 cases, a wrong diagnosis was made thirteen times only. Steinbach finds it necessary to modify the figures given by Frankenhäuser, the mean number for males being 131, and for females 144. The subject must be considered, therefore, as still an open one: the evidence, so far, appears to be insufficient to enable us to draw any positive conclusions on the subject. Many circumstances are capable of modifying the frequency of the foetal heart-beat; and even if Frankenhäuser's theory should prove on the whole to be correct, this would vitiate the results obtainable in particular cases.*

Next as regards the period of pregnancy at which the foetal heart may be heard. Practically, it is a sign of pregnancy which may be ordinarily detected in the *fifth month*. If the observer be experienced, and if circumstances be favourable, it may be heard earlier than this. Depaul heard it as early as eleven weeks and four days after conception—that is, near the end of the fourth month. After it has been once heard in a particular case, it should be possible to hear it up to the end of pregnancy. Hüter states that he has never failed to hear the foetal heart in the sixth month, unless in cases where the foetus has proved to be dead. Depaul and Jacquemier failed to hear the foetal heart in only eight cases out of 906, and in six of these the foetus proved to be dead.

With respect to the value of the sound of the foetal heart as a sign of pregnancy, it is at once the surest and the best sign available; and to an observer experienced in obstetric auscultation, and knowing the fallacies to be avoided, it is an absolutely sure sign of pregnancy. The fact that in a woman whose pulse is 80 in the minute, a double sound can be heard in the hypogasttric region, 130 in the minute, is a positive indication that pregnancy is present. The sign in question is the more valuable that it can be discovered (pregnancy being far enough advanced) without any other examination of any kind—without asking a single question. Such is the case when the foetal heart *can* be heard. But the absence of the sound, or the inability of the observer to hear the sound, is not always a proof that the woman is not pregnant. The foetus may be dead. The value of the observation in this particular will entirely depend on the skill of the

* The observations on this interesting subject, and above referred to, will be found in the volumes of the *Monatsschr. für Geburtsh.* for the years 1859, 1860, 1861.

observer. In a case where a difficulty is found in hearing the sound, it is well to seek for a hard part of the tumour, and to apply the stethoscope over that point; and, again let it be stated, practice will do much to remove difficulty of this kind. If the abdomen evidently contain fluid in addition to the tumour we suspect to be the pregnant uterus, care must be taken to apply the stethoscope *on* the tumour. If the quantity of liquor amnii be much larger than usual, we may be able to hear the foetal heart only after careful and prolonged search, and then very faintly. The foetal heart-beat, when heard, is a positive sign of pregnancy; when it is not heard, we have to make our diagnosis of pregnancy on other grounds.

b. The Uterine Souffle.—This is a sound synchronous with the mother's pulse, and varying, as does the mother's pulse, in frequency. It is ordinarily, and very accurately, compared to the sound produced by blowing gently over the mouth of a wide-mouthed bottle; still more closely it resembles the sound heard in the large arteries of the body, when these are at all subject to pressure. The uterine souffle is heard more generally in one or other of the inguinal regions, at an advanced stage of pregnancy—most commonly, according to Montgomery, at the situation of the right Fallopian tube. It is, however, variable in position, and may be heard in rare cases as high as the fundus of the uterus. Generally, the surface over which it can be heard is limited to a space a few inches in diameter or less. It is not always to be heard; thus, Naegele found it absent in 20 out of 600 cases. There has been much dispute respecting the cause of the sound in question. By many it is supposed to be produced in the walls of the uterus, near, or at the insertion of, the placenta (hence the name occasionally given to it—the 'placental souffle'); by others it is supposed to be produced by the pressure of the gravid uterus on the large vessels behind it. It is very certain that, whether produced in, or by means of, the uterus in a gravid state, it is capable of being closely simulated under conditions altogether different. It may be detected at a somewhat earlier period of pregnancy than the sound of the foetal heart. As regards the value of the uterine souffle as a sign of pregnancy, it is now almost universally conceded that it is worthless; no dependence whatever is to be placed upon it as a means of distinguishing the enlargement of the uterus due to pregnancy from other forms of enlargement of this organ. In point of fact, the retention of this sound among the signs of pregnancy is of no real service, and is

likely to attract attention which would be more profitably spent in searching for the sound of the foetal heart. It very commonly happens that the two sounds, the uterine souffle and the foetal heart-beat, are heard together.

c. The Funic Souffle.—In rare cases, the funis lying over a solid part of the foetus, and being interposed between it and the stethoscope, a souffle is heard, *double*, and having the frequency of the foetal heart-beat. This, which is Kennedy's explanation of the matter, is the one more generally received. The sign has little practical value, as it is so rarely and so accidentally heard.

d. Sound produced by Foetal Movements.—This sound, as a sign of pregnancy, has received some attention from the fact that Naegele, its discoverer, ascertained that it could be heard first at a very early period of pregnancy—in the third month—before other auscultatory signs are available, and indeed before other signs, some more, some less important, are discoverable. Depaul, who has written an almost exhaustive work on foetal auscultation, confirms Naegele's views. The sound in question is a slight dull sound accompanied by a slight or sudden impulse or jerk, and it is the sound of the movement which can be felt by the fingers as before described (see p. 360). Depaul heard the sound in question in nine out of twelve women who had not passed the twelfth week of gestation.

The value of the sign may be gathered from what has been stated. An experienced observer might thus obtain very early evidence of the presence of pregnancy. One not very well experienced in obstetric auscultation would pause and wait until more positive and reliable information could be procured before pronouncing a decided opinion.

Lastly, in respect to all the signs derivable from auscultation, it will have been gathered from what has been said that it is the foetal heart-sound, and that alone, in which any confidence can be placed in the diagnosis of ordinary cases. Unless the observer be very acute, auscultation is of no service, when the woman has not passed the thirteenth or fourteenth week. Four months passed, auscultation becomes of the highest practical value.

Special Consideration of the Diagnosis of Pregnancy from other Forms of Abdominal Tumour.

The physical characters of the abdominal enlargement due to pregnancy have now been described; and it is not too much to say that an observer who has made himself practically familiar with

these characters will rarely find much difficulty in the diagnosis of pregnancy, when this condition is present. It will now be necessary, however, to mention the other conditions with which pregnancy may be, or has been, confounded, and to indicate briefly the diagnostic points to be kept in view.

From *fibrous tumour* of the uterus pregnancy is distinguished by the duration of the disease, usually chronic, by the absence of changes such as are due to pregnancy in the os uteri, by the absence of the changes in the areola, by absence of auscultatory signs of presence of a foetus, absence of ballotement, &c. A most painful case is recorded by Dr. Bedford, of a young lady affected with a fibrous tumour of the uterus and who was pronounced by two medical men to be pregnant, there being no ground whatever for the assertion. The case will be found related at length in the original work,* and should be a warning to all as to the danger of positively expressing opinions which are not based on firm and sufficient grounds. The possibility of pregnancy coexisting with a fibrous tumour of the uterus should not be forgotten.

From *polypus of the uterus* pregnancy is to be distinguished in the same way. The hæmorrhages more usually associated with polypi of the uterus would generally lead the observer to exclude pregnancy from the consideration.

From *distension of the uterus with fluid* pregnancy is distinguished by the history, which shows a progress unlike that of pregnancy, by the absence of the areolar changes, and by the absence of auscultatory signs. In both, menstruation would be absent; in both, the breasts might be swollen and painful. In cases of distension of the uterus by *gas*, the signs are peculiar—clearness of percussion over the tumour, &c.

From *carcinoma of the fundus uteri*, and from *hypertrophy* of the uterus, pregnancy is distinguished by the pain, discharge, and general indisposition present in the former affection; by the progress of the case in the latter. The hypertrophied uterus does not grow. In neither instance can auscultation give other than negative results.

The *distended urinary bladder* could hardly be mistaken for the gravid uterus, unless great carelessness were shown. The catheter should be used in any case where there is the smallest doubt. It may happen that the bladder is distended while the

* *Clinical Lectures on Diseases of Women and Children*, p. 50, 4th ed., quoted in Dr. Tanner's work, p. 162.

patient is at the same time pregnant (see p. 365), or while there is a large fibrous tumour of the uterus present.

From *ovarian dropsy* pregnancy is distinguished most certainly by the presence or absence of auscultatory signs. The history of the case generally throws great light upon the diagnosis, but not invariably so. The most certain means of diagnosing between the two, auscultation apart, is by vaginal examination. Thus, if we find a tumour in the abdomen reaching above the umbilicus, while the os uteri is unaltered, the cervix hard and firm, and the body of the uterus not enlarged, pregnancy is under these circumstances nearly impossible. The other diagnostic indications drawn from a vaginal examination have been described. Ovarian dropsy may coexist with pregnancy, and in such a case the symptoms would be necessarily, at first sight, perplexing. The two tumours might or might not be detected, and be separable, externally. The os uteri would be altered as in pregnancy; auscultation would give positive results. The other symptoms present would vary in different cases.

From *ascites* pregnancy should be readily diagnosed. The clearness of percussion in the flanks, and the presence of a rounded tumour in the hypogastric region, would be conclusive against ascites. Auscultation and vaginal examination would give positive evidence of pregnancy. Pregnancy and ascites is a combination not very rare, and its diagnosis may be difficult; for if the ascitic effusion be considerable, the uterine tumour may be completely surrounded by it and hidden from external view. Auscultation might give negative results under such circumstances; but a vaginal examination and an inspection of the breasts would give some reliable indications.

Fat in the omentum and abdominal parietes could not be mistaken for pregnancy, if auscultation and vaginal examination were had recourse to. It could only deceive those who depend on abdominal enlargement as a sign of pregnancy. The case of the celebrated so-called prophetess, Joanna Southcote, must be mentioned in connection with this question. This woman, aged 64, affirmed that she was pregnant, and deceived several medical men. The chief grounds for the belief that she was pregnant appear to have been the presence of a rounded tumour in the hypogastrium, and a sensation conveyed to the hand, as of foetal movements. After death the abdominal walls were found four inches thick in fat, the omentum was one mass of fat, the uterus small. It was believed that the tumour felt during life was the

bladder purposely distended with urine; and the pseudo-motions of the child, it is conjectured, were due to contractions of the recti muscles, over which the woman had obtained such control as thus to simulate foetal movements.

Fæcal tumour, hæmatocele, abscess in the pelvis, hydatid tumour of the peritoneum, cancer of the peritoneum, cysts of the omentum, &c., are distinguished from pregnancy, positively, by the presence of signs of enlargement of the uterus and auscultation; negatively, by the course of the particular affection, and by the absence of that regular onward progress in the degree and intensity of the symptoms witnessed in pregnancy.

Comparative Estimate of the Value of different Signs of Pregnancy.

This place appears to be an appropriate one for summing up generally the signs of pregnancy, for considering the whole of these signs together, and for assigning to each its proper comparative value. At the same time, it will be necessary to state the period of pregnancy at which the different signs are available for diagnosis.

Perfect evidence of the existence of pregnancy is not obtainable until after the third month, unless in those very rare cases where the foetal heart may be heard just at the end of this time. The evidence obtainable before this date only enables us to come to the conclusion that pregnancy is *probable*. The signs (probable ones) of pregnancy up to this time are—suppression of the menses, swelling of the breasts, descent of the lower part of the uterus in the pelvis, flattening of the abdomen.* An examination will not usually enable us to give a positive opinion, if undertaken at this time.

After the end of the third month, during the fourth and fifth, an abdominal and a vaginal examination give, or may give, decisive indications. Menstruation is still absent in ordinary cases; the breasts continue to enlarge, and the areolar changes become developed; the os uteri undergoes its characteristic changes; the uterus can be felt to be enlarged from the vagina and above the pubes; the vagina assumes a dusky hue; the motions of the foetus can be felt by the observer and by the patient; ballottement is recognisable; the sounds of the foetal heart can be heard.

* This flattening of the abdomen was reckoned by the older authorities as an early sign of pregnancy.

‘En ventre plat
Enfant il y a.’

Thus ran the old proverb. Montgomery, *op. cit.* p. 157.

After the fifth month and up to the end of pregnancy, the symptoms just described *continue* and become intensified.

The signs of pregnancy have been divided into three classes by Dr. Montgomery:—1. Presumptive; 2. Probable; 3. Unequivocal. Practically, however, there is no great difference between what is presumptive and what is probable; and if distinctions are to be drawn between shades of belief, the division might be extended *ad infinitum*. It appears quite sufficient to arrange these signs under two classes—1. the certain, and 2. the probable, signs of pregnancy.

1. The *certain signs of pregnancy* are:—

The active movements of the child unequivocally felt by another;

The presence of the child in utero ascertained by ballotement;

The sounds produced by the pulsations of the foetal heart.

A positive opinion may be expressed if any one of these be distinctly observed, the observer being one experienced in such enquiries, and aware of certain possible sources of fallacy. These latter have been described in their proper place. On the other hand, no positive opinion can be expressed if none of these signs be discoverable, however strongly the observer may feel inclined on other grounds to give his final decision. And as caution should be exercised in this particular, so also caution is necessary in giving an opinion that pregnancy is not present, unless the negative evidence be very decisive.

2. The *probable signs of pregnancy* need not be enumerated. They include all those not included under the first head, and to each of them this remark more or less applies—that their value as probable signs of pregnancy is exceedingly different in different cases and at different times: the circumstances of the case may elevate one of these probable signs into the position of a certain one, so far as that case is concerned, but this particular sign may be valueless in the next instance. Probable evidence should always be regarded as probable only; when a scientific opinion is to be given as to the presence of pregnancy, probable evidence should never be made the basis of the expression of a decided opinion.

CHAPTER XIII.

TUMOURS TRACEABLE INTO THE PELVIS (*continued*)—TUMOURS OF THE OVARIES.

Affections of the Ovaries divided into Inflammatory Affections, Cystic Affections, and Solid Tumours.

INFLAMMATORY AFFECTIONS.—Abscess of the Ovary; Relation to Pelvic Abscess.

CYST AFFECTIONS.—Hydatid Cysts—Wolffian Cyst—Ordinary Cystic Disease of Ovary, including various Forms of OVARIAN DROPSY—Pathology of Ovarian Cystic Disease—Composite Tumours of Ovary, partly Solid and partly Cystic.

SOLID TUMOURS OF THE OVARY.—Simple Enlargement—Dermoid Cysts—Apoplexy—Enchondroma—Fibrous Tumour—Cancer.

THE present chapter is almost exclusively devoted to the consideration of the pathology of the ovaries, a knowledge of which is essential for purposes of diagnosis. Further details on this subject may be found in the treatise by Kiwisch, edited by Scanzoni, and translated and additionally annotated by Mr. Clay; in the article ‘Uterus,’ by Dr. Arthur Farre, in the ‘Cyclopædia of Anatomy and Physiology;’ and in standard works on Diseases of Women.

We may include under three heads those affections of the ovaries which ordinarily come under notice, and which have to be taken into consideration in all cases where the question before us is the diagnosis of the nature of a certain tumour—viz. 1. inflammatory affections; 2. cyst affections; and, 3. solid tumours. It will be shown that in by far the majority of cases the ‘cystic’ affections of the ovary are those which particularly engage our attention.

INFLAMMATORY AFFECTIONS OF THE OVARIES.

The only inflammatory affections which interest us in this place are those which result in the production of actual tumours. Other inflammatory affections of the ovaries, chronic ovaritis, &c., are more interesting in connection with the diagnosis of pain, discomfort, &c., experienced in the ovarian regions. Concerning this latter subject the reader is referred to a former chapter (see pp. 113 *et seq.*)

Abscess of the Ovary.—Inflammation of the ovary going on to the production of pus, is a comparatively rare condition apart from the puerperal state and the contingencies therewith connected; apart also from that form of inflammation liable to arise in cases of cystic disease of the ovary. Inflammation and abscess of ovarian cysts are not very uncommon, but here the circumstances are altogether different. Cases of primary idiopathic abscess of the ovaries are extremely rare.

‘Pelvic abscesses’ are collections of pus, originating either in the cellular tissue of the broad ligaments near the ovaries, or beneath the uterus, or in the tissues of the ovary or uterus, or in the peritoneal cavity itself; and it is probable that in many of such cases more than one of these parts are simultaneously and primarily attacked with inflammation. The phenomena witnessed in such cases have been already described. It remains now to state that it is probable that, in many of these cases of ‘pelvic abscess,’ the primary condition present is abscess in, or in the neighbourhood of, the ovary; this abscess extending to the tissues adjacent, which become successively involved. Women who have had severe labours, or whose labours have been brought to a termination by operative interference, or patients who have been subjected to operations involving manipulation, cutting, &c., of the tissues of the vagina or uterus, may have abscess of the ovaries of the kind now under consideration, the attending phenomena being, in bad cases, those ordinarily witnessed in pyæmia; or, falling short of this, the symptoms present are those attending formation of abscess in other parts of the body—local pain, heat, swelling, tenderness on pressure, &c., preceded by attacks of shivering, by nausea or vomiting, by signs of local pressure, difficulty or pain in micturition, pain in defæcation, &c. The puerperal cases and the non-puerperal cases, included in the remarks just made, might be conveniently classed as cases of *traumatic* abscess of the ovaries.

Next we have the rare cases of *idiopathic* abscess. The causes of this condition are obscure. It appears probable that sudden suppression of menstruation, as by application of cold to the feet, or from the operation of any other cause, may lead to the production of acute inflammation and abscess of the ovary. The fact remains, however, that cases do now and then occur in which there is formation of abscess in the ovarian region, going on to the production of a tumour of considerable size, and capable, therefore, of simulating the more ordinary cystic tumour of the ovary. A very interesting case of this kind is recorded by Dr. West, in which the abscess

persisted for some time, and was finally evacuated spontaneously through the bowel.*

CYSTIC AFFECTIONS OF THE OVARIES.

Under this term are included a series of affections of the ovary, of great interest and importance. In many cases, the individuals the subjects of these affections are necessarily destroyed by them, if they are left to pursue their course unchecked; in some cases, a fatal termination is inevitable under any circumstances, although life may be prolonged for a certain time by appropriate treatment; in a few cases, also, the disease remains quiescent, and there may be spontaneous cure. Very great interest thus attaches itself to the diagnosis of cystic affections of the ovary, the degree of this interest being increased, 1. by the difficulty of predicating what the issue of a particular case will be; 2. by the fact that the diagnosis of one form of cystic disease from another is not always easy; 3. from the fact that, even when the diagnosis has been made as complete as possible, the selection of the proper treatment in each particular case must still be matter for grave deliberation.

The cystic affections of the ovary are—

Hydatid cysts;

Wolffian cysts;

Dermoid cysts;

Ordinary cysts, met with in what is termed ‘ovarian dropsy,’ the best term for which would perhaps be ‘Graafian’ cysts;

Combinations of the latter with solid tumours or other forms of disease of the ovaries—Composite Tumours of the ovary.

Hydatid cysts may be found growing on the surface of the organ and adherent to it, these having the ordinary characters of hydatid cysts, such as are found in other localities. When met with in the ovaries, they generally, in all probability, originate in the liver. These hydatid cysts may be confounded with true ovarian cysts. Lastly, a cyst is occasionally found growing from the broad ligament which is an enlargement of one of the little pendulous cysts ordinarily found in this position.† These are the *Wolffian cysts*. They are single, simple, do not grow larger than an orange, and do not occasion inconvenience. Occupying, however, a position close to the ovary, the Wolffian cyst might be mistaken for the more serious and true ovarian affection.

* *Op. cit.* p. 471.

† See Dr. Farre's work, *jam cit.*, for a very admirable description and delineation of these bodies.

Next we have a remarkable class of cases, also not common, in which there are found cysts in the ovary containing simply fat, or fat together with masses of hair, and together with these, in some cases, we find teeth and bones. These are termed *dermoid cysts*. They grow slowly—in rare cases rapidly—are ordinarily single, and only in extremely rare cases attain a size comparable with that observed in ordinary ovarian dropsy. In some cases, the ovary affected contains, as in a case related by Dr. West, a vast number of cysts of this kind. The now generally received theory as to the production of these dermoid cysts is, that on their inner surface there is a layer of tegumentary tissue, and that the contents of the cysts are the result of the growth of this tissue. It is quite certain that they may be formed independently of sexual intercourse. The one case related by Dr. Baillie is sufficient to establish this proposition. The instance in question was that of a girl æt. 12, whose generative organs were still undeveloped, but one of whose ovaries was filled with hair, teeth, and fatty matter.* Clinically, these cases of dermoid cysts of the ovary fall under the head of ‘solid’ tumours, though pathologically they come under the head of ‘cystic’ disease of the ovary.

OVARIAN DROPSY.

The more ordinary cystic tumours of the ovary may be composed of—

1. A large single cyst.
2. Of one larger, and two or more smaller cysts.
3. Of several large cysts, with a number of smaller ones.
4. Of several cysts, with solid matter within some of them, or between them; this solid matter being cancerous or not. This latter class of cases belong more properly to the next class of cases—‘composite’ tumours of the ovary.

By the term ‘cyst’ of the ovary is meant a rounded, shut sac, containing fluid, or it may be, nearly solid contents, and varying exceedingly in size. The cysts of the ovary appear to be constituted by Graafian follicles, the growth of which has been in some manner so altered as to give rise to the cysts in question. The ovary, or both ovaries, become affected, without any apparent reason, with this tendency to the production of cysts, and from that time forward, and for an uncertain period, the healthy maturation and development of Graafian follicles appear to be arrested.

* See Farre, *loc. cit.* p. 586.

One ovary may be so affected, the other being perfectly sound and capable of producing ova. Pregnancy together with ovarian cystic disease has been repeatedly noticed, and several women who have had one ovary removed for cystic disease have afterwards conceived and borne children. On the supposition that the cystic affection is the manifestation of a general dyscrasia, it is of course impossible to explain why it is that one ovary may be affected and the other remain sound. The obvious inference is, that the production of cystic disease is the result of some local alteration and peculiarity, but this leaves it equally unexplained why both sides are not always affected. Our knowledge of the pathology of cystic disease as ordinarily witnessed in the ovaries, seems reduced to this: that it is the business of the ovary to secrete cysts—the Graafian follicles—that this process of secretion is occasionally disturbed and deranged, and that one result of this is the production of large cysts of pathological character.

The variations observed in the relations of the different cysts of which an ovarian tumour may be composed are innumerable. Where there are several cysts this variety is most evident. Thus we may have one large cyst, into the interior of which other smaller cysts are growing; we may have an assemblage of several tolerably large cysts, in each of which others are found growing; and there may be even a third order of cysts, growing within the latter. Dr. Farre applies the term ‘multiple cysts’ to those cases where there are three or four or more cysts, quite or nearly contemporary in growth, and side by side. The term ‘compound’ is applicable to those tumours where formation of secondary or tertiary cysts takes place within the first. These distinctions do not, however, express any very important difference; as descriptive distinctions only, they are useful. The Graafian theory of the origin of ovarian cystic disease being admitted, it is easy to see how all sorts and varieties may present themselves in the relations of cysts. A cyst grows, and in its growth carries over it, or within it, portions of the ovarian stroma, in which lie the elements of future Graafian follicles. These undergo the pathological cystic transformation, and hence we get cysts developed one within the other almost *ad infinitum*.

The variations in the growth of the cysts occasion also great differences in the aspect and relations of the tumour at different periods. Thus, a ‘simple’ cyst may preserve its integrity for many years, the remainder of the ovary not partaking, or partaking reluctantly, so to speak, in the cystic transformation; or the

primary cysts may be rapidly encroached upon, and filled up with secondary growths of cysts. And what may happen in reference to the first and second growths may take place also between the secondary and tertiary cysts.

The *size* of ovarian cysts is very various, from that of the ordinary Graafian follicle to that of a cavity equal to, and even exceeding, that of the whole abdomen of a healthy individual. In one exceptional case, the very enormous quantity of upwards of ten gallons of fluid was removed at one operation from one cyst.

The *shape* of the cysts is ordinarily rounded, where they are single. Where also the tumour contains two or more large cysts, the outline of the whole tumour is rounded. When so large as to occupy the greater part of the abdomen, the shape of the cyst or cysts is determined necessarily by that of the abdominal walls.

The *consistence and thickness of the walls of the cysts* are various. The wall is sometimes very thin, especially in the case of single cysts, or where the tumour is mainly made up of one large cyst: the free surface of most cysts is thin. But the cyst walls have often very considerable thickness, and they are liable to be thickened by deposit from within, this deposit being the result of inflammation or coagulation of effused blood, or deposition of fatty matter in the shape of cholesterine. In the case of simple cysts, the walls are generally divisible into three layers. The outer is the peritoneal covering, which is thin and translucent. The middle coat is of varying thickness, according to the age of the cyst and other circumstances; it is generally a firm, fibrous layer, giving strength and consistence to the cyst. The middle coat contains the blood-vessels of the cyst, which are often very numerous and may be of very considerable size. Fatal hæmorrhage may occur, in the operation of paracentesis, from wounding these vessels. The internal coat is a simple layer of cells, very much resembling the pavement or epithelial cells—that is to say, when further changes, inflammation, &c., have not occurred in the interior of the cyst.

The *contents of ovarian cysts* is also open to great variation. The contents are mostly fluid, but very frequently they have a consistence more nearly that of treacle, and we may have all gradations between a limpid fluid and a thick mucous-like mass. The colour varies excessively. In the majority of cases, the large cysts contain a fluid simply serous in character, light yellowish, and transparent; where there are many cysts, it is not uncommon to find the contents of no two cysts precisely alike. Blood is, not very uncommonly, effused into the cavity of ovarian

cysts, and the transformations through which the blood passes give rise to peculiar appearances, the contents then assuming various dark shades of colour. There may be flakes of fibrinous matter together with fluid, or the contents of the cyst may be distinctly puriform. The consistence of the contents is peculiar. In almost all cases there is a remarkable viscosity, and the contents of ovarian cysts are sometimes so extremely tenacious, that the whole mass when pulled out holds almost inseparably together. The chemical constitution of the fluids of ovarian cysts is as follows:—

Solid matters	.	.	58	per 1,000 (average of 31 analyses)
Pure albumen	.	.	43	„ 1,000 „ „ 26 „
Salts	.	.	7	„ 1,000 „ „ 15 „
Fatty matters and fibrin, in small quantities.				

The foregoing figures embody the results of analyses made by Becquerel, of the contents of ovarian cysts taken from ten individuals. The average only is stated above, but there was a very wide range in the proportions of the different constituents in different cases. Thus the figures representing the highest and lowest proportion of solid matters were 101 and 21; the highest and lowest for albumen 90 and 17; for salts 10 and $1\frac{1}{2}$. These results are calculated from a table which will be found in Mr. Clay's Translation of Kiwisch (p. 108), and which was supplied to Mr. Clay by Becquerel.

An important fact here to be noted is, that the same cysts have not at all times like contents; thus the same cyst tapped at different periods may give issue to fluids of varying degrees of consistency.

COMPOSITE TUMOURS OF THE OVARY.

Under the term 'composite tumours of the ovary' may be very conveniently included a number of cases in which, together with cysts of the kind previously described, and probably originating in alterations of Graafian follicles, there are found in the tumours various solid and other growths, which are not, or at all events not so evidently in all cases, products of alteration of Graafian follicles. Under the division now to be considered are included cases known as 'cystic sarcoma' of the ovary, 'cystoid cancer,' 'alveolar or colloid disease' of the ovary. In Kiwisch's treatise the term used to include this group is 'compound' cysts. The term 'composite' is perhaps less liable to lead to erroneous inferences on the subject. In all the various cases now to be considered

we have cystic growths, but there is something more, viz. growths more or less solid in character.

Cystic sarcoma of the ovary is constituted by presence of a combination of cysts with a growth of a solid character. The solid matters in question may be found *within* the cysts, in the form of vegetations sprouting up, growing rapidly, filling up the cysts more or less completely, and having the form of dendritic processes vesicular or pyriform in shape: although they are many of them cellular in character, and may even be filled with fluid, they yet give to the tumour a semi-solid feel and consistence. In other cases these excrescences are small, solid, fibrous, warty-like growths. Growths of the same character may be found outside other cysts on their peritoneal surface. Lastly, growths of a solid sarcomatous product may be found in the substance of the ovary between cysts of presumed Graafian origin, and very large ovarian tumours may be found constituted to a great extent by the solid growth in question. Mr. Spencer Wells proposes a name for the tissue composing this solid material—*adenoma*. The following is a description of the microscopical appearances presented in a specimen exhibited recently at the Pathological Society:—‘It consists of a delicate fibrous stroma, forming round or oval alveoli, the latter lined by densely-grouped epithelial cells forming a zone enclosing an area loosely packed with cellular elements of a similar form. The tumour belongs distinctly to the class of fibro-epithelial growths.’* In these cysto-sarcomatous tumours we may have a greater or less proportion of cystic disease in different cases; the cysts or the solid matter respectively predominating. When the cysts are limited in extent, the tumour assumes more the character of a solid tumour; and correspondingly, when the cyst element predominates, we have a tumour whose contents are more or less fluid.

Alveolar or Pseudo-colloid Disease of the Ovary.—In most cases of this affection we find the ovarian tumour composed of two parts more or less intermixed:—1. Of cysts such as are met with in the ordinary form of ovarian dropsy. 2. Of a peculiar structure—the colloid disease or ‘alveolar cancer,’ as it is sometimes called. The latter designation is not a good one, for an attentive consideration of the facts leads to the conclusion that the affection is not cancer at all. The term ‘colloid’ disease, or ‘alveolar’ disease, is therefore preferable. Dr. Farre’s excellent description of this

* *Med. Times and Gaz.* Oct. 25, 1862.

pathological condition is as follows :—‘The surface of a section may present in some parts the appearance of a fine sponge, the alveolar spaces being condensed and somewhat flattened in consequence of the profusion with which the alveoli have been developed. In other portions of the same tumour, and occasionally as it were in separate lobules of it, the alveoli are more extended, and take a round or oval form.’ ‘These cysts are filled with a viscid mucus-like material, resembling half-liquid jelly, which is sometimes colourless, but oftener of a greyish amber, yellow-green, or reddish hue. Imbedded in the jelly-like substance may be found opaque white masses, resembling blanc-mange or thick cream.’* The mass on section sometimes resembles a honeycomb. The alveoli or cavities in which the jelly-like substance is contained are not like the cavities present in ordinary ovarian cystic disease, and the colloid disease of the ovary thus forms an affection peculiar in its anatomical characters.

Cystoid cancer constitutes another composite tumour. Here the more ordinary cysts are present, together with medullary cancer, the cancerous growths pervading the stroma of the ovary, and pervading, as is the manner of cancerous growths in other parts of the body, in succession, the adjacent structures. As is the case in the two preceding groups, the proportion of solid matter to cystic growth varies in different cases and at different periods in the same case. In cases of cystoid cancer the tumour may grow with great rapidity, and the whole tumour may be of considerable size. Semi-solid, or nearly solid to the feel at one part—more or less fluid at another, presenting often rounded eminences on its surface—such are the general characteristics of the ovarian tumour so constituted.

Respecting these composite ovarian tumours, it may be stated almost equally of all, that they often grow with excessive rapidity : they are frequently the seat of hæmorrhage, the blood being poured out in the interior of some of the cystic cavities, and thus causing the tumour rapidly to increase (Kiwisch).

SOLID TUMOURS OF THE OVARY.

In Kiwisch's work these tumours are classed as follows :—
1. Hypertrophy. 2. Adipose (dermoid) cysts. 3. Apoplexies of the ovary. 4. Fibrous tumours. 5. Enchondroma. 6. Cancer.

The tumour constituted by simple enlargement of the ovary never attains any considerable size, probably not above that of a pigeon's egg. There is a remarkable case, however, recorded by Dr. Bright, in which both ovaries were found after death enlarged pretty equally, and each constituted a firm fleshy tumour nearly six inches in the longest diameter, and having the shape of a kidney. They were taken from a patient who had borne children and who had passed the menstrual period of life. She had experienced pain referable to the uterus, a hard substance had been perceptible over the pubic region, and there had been considerable difficulty in micturition. She died, greatly emaciated and having had jaundice and ascites. The tumours were not malignant in character.*

The *dermoid cysts* have been already considered under the head of 'Cystic Disease of the Ovary.' Ordinarily limited in size, they may in very rare cases attain an enormous development.

The *apoplexies of the ovary* are constituted by inordinate effusion of blood, and coagulation of the same, in Graafian follicles, or by hæmorrhage into pathological structures of various kinds, such as cysts, or in the interstices of growths of cancerous or colloid matters. In the former case the tumours produced by the hæmorrhagic effusion are very limited in extent; in the latter they may be very considerable.

Fibrous tumours are met with in the ovary, in many respects resembling those found growing so frequently in the walls of the uterus; but a distinct independent pedunculated fibroid tumour of the ovary is a very rare pathological product, many cases recorded as such having really a true uterine origin. The fibrous growths met with in combination with cystic disease of the ovary belong to a different category, and are not so uncommon. The solid independent fibroid tumours of the ovary have been found sometimes to undergo osseous transformation, and the same may probably hold good with reference to other fibrous tumours.

Enchondroma of the ovary is very rarely observed.

Cancer of the ovaries constitutes one of the most important varieties of solid tumour. It occurs in two forms, scirrhus and medullary, the latter being the more common. Cancer occurring primarily is more frequently than not associated, as has been already stated, with cystic disease of the organ, or it may be found affecting the cystic growths secondarily. The hard form of cancer of the

* *Clinical Memoirs on Abdominal Tumours.* New Syd. Soc.'s edition, p. 146.

ovary does not attain a large size; it does not exceed the size of a child's head, and is usually very much smaller. Cancer of the ovaries may be found in association with cancer of the adjoining parts—that is, it may spread to the ovaries from the uterus or other organs, and may involve, more or less, the whole contents of the pelvis; and it may, when so found, originate in the ovary or in the adjacent organs. True cancerous disease of the ovary of large size is rare, unaccompanied by similar disease in adjacent parts; and it is also rare to find carcinomatous disease of the ovary uncomplicated with cystic disease of the same organ. Ascites is very frequently associated with cancerous disease of the ovaries.

CHAPTER XIV.

TUMOURS TRACEABLE INTO THE PELVIS (*continued*)—DIFFERENTIAL
DIAGNOSIS OF OVARIAN AND UTERINE TUMOURS.

Enumeration of the various Forms of Uterine and Ovarian Tumours now to be distinguished one from the other—Diagnosis as affected by the Condition of the Menstrual Function—Cases in which Menstruation is absent: Pregnancy to be eliminated first—Diagnosis as affected by other Particulars; the History, Results of Examination, &c.—Method to be pursued in particular Cases—Use of the Sound in conjunction with Examination through Abdominal Walls—Results obtained—Fluctuation Test—Illustrative Cases—Causes of Mistakes in Diagnosis.

THE abdominal tumour which is present, and which is traceable into the pelvis, having been determined (see previous chapters) to be either ovarian or uterine, the further diagnosis is now to be considered.

The following is an enumeration of the various uterine and ovarian tumours between which it is now our object to distinguish.

The UTERINE series include: pregnancy, polypus, fibroid tumour; distension of uterus by fluid (menstrual or other fluid accumulations); distension by gas; abscess of the uterus; carcinoma of the fundus of the uterus; fibro-cystic tumour; and osseous tumour of the uterus.

The OVARIAN series include: simple encysted ovarian dropsy; multiple and compound cysts; composite tumours, partly cystic and partly solid, including cysto-sarcoma, alveolar degeneration, and cystic cancer; hydatid cysts; Wolffian cysts; dermoid cysts; and solid tumours of the ovary—fibrous tumours, cancer, simple enlargement.

The Diagnosis as affected by the Condition of the Menstrual Function.—The method to be pursued in order to determine the nature of the tumour will necessarily be somewhat different under different circumstances. Presuming, however, that no special considerations interfere, the better course for the enquirer now to adopt will be to ascertain the state of the menstrual function.

It will be found that from the several data—the presence of an abdominal tumour, either ovarian or uterine, and the condition of the menstrual function—it will be possible to learn a great deal as to the nature of the tumour.

Thus, supposing that the patient inform us that *there has been no menstrual discharge for some time previous*, we should immediately suspect pregnancy, and the next thing to be done would be to ascertain whether the size of the tumour, its shape, &c., fell in with this view of the case. If the tumour had only lasted a few months—say six—and there had been no menstruation for six or eight months, this would constitute a sort of preliminary justification of the pregnancy theory. If the tumour had lasted six years, and menstruation had been absent for six months, this would be against pregnancy, but not absolutely so, inasmuch as there might be a tumour *plus* pregnancy. The mere fact that menstruation is not going on should, under almost all circumstances, induce us to give the pregnancy theory a full consideration. With the theory in question before us, especially if circumstances seem to favour it, proper means should be taken to decide the point definitively before attempting to proceed further. This will be accomplished by ascertaining the physical characters of the tumour by external examination, comparing the results with those laid down as the ordinary results of such examination in cases of pregnancy (see p. 358). If the external examination by hand, stethoscope, &c., give no indication, or insufficient at least on which to form a conclusion, then a vaginal examination, an examination of the breasts, &c., would be required.

There is one method of examination which is always to be avoided until we are able to assure ourselves that the case is not one of pregnancy—viz. passage of the sound into the cavity of the uterus; the use of the sound is never to be thought of as long as it is unproved that there is no pregnancy. This is an important fact to be kept in view in cases similar to the one just now alluded to, viz. where a tumour having existed for some time, the possibility of pregnancy having been added thereto does not at first enter the mind of the patient or the attendant.

The question of pregnancy therefore comes before us either *primarily*, as in cases where the tumour is of recent growth—i.e. has not been in existence longer than six or eight months—or *secondarily*, where the continual presence of a tumour, during a period of upwards of nine months, has been substantiated.

The investigation of the history of the case, and the examination

practised, giving, we will suppose, no evidence of pregnancy, there is nothing enabling us to say positively that pregnancy is present. The next step to be taken under such circumstances, is to prove a negative, and to determine positively that the patient is *not* pregnant. This second question is more difficult, or may be more difficult, to deal with than the first, for very obvious reasons. Thus the case before us may be of this kind: the patient has not menstruated for four months, there is a tumour in the abdomen the size of the gravid uterus of six or eight months, there is no sound of a foetal heart, the breasts are painful, perhaps swollen, the uterus is, from the vagina, felt to be enlarged, but there is no ballottement. In such a case the observer will, on the data mentioned, find it difficult to exclude pregnancy—to prove the negative. It may be that his ear is defective, his touch untutored; the case may still be one of pregnancy; it may be one in which—as is not so very rare there is a slight menstrual-like discharge for one or two months, or longer, pregnancy really dating from an earlier period; or it may be pregnancy with destruction of the embryo, and hydatidiform degeneration of the ovum, as in an instance recorded at page 365. The condition of the orifice of the uterus would under such circumstances help the observer either to prove the desired negative, or be sufficient to show him that the making of the diagnosis must be for a while postponed. The state of the lower segment of the uterus, also, would very greatly assist in the desired solution. Thus, in the case of an abdominal tumour as large as a seven or eight months' gravid uterus, it would be sufficient to prove the required negative, if we found that there was absolutely no evidence of the os uteri being continuous with a rounded tumour, perceptible to the touch equally behind, in front, and at the side of the same. The precise value of the signs derivable from digital examination of the os uteri, in suspected pregnancy, has already been considered at length (see p. 247). The point to which it is necessary to direct attention, in this place, is that when the suspected abdominal tumour is of the size of the six months' gravid uterus, and upwards, the vaginal digital examination is of the greatest service in enabling us to prove the negative, when the case is really not one of pregnancy. It is particularly valuable in those cases where a tumour having existed for some considerable time—say a year—there is a possibility of pregnancy being also present.

In trying to prove this negative, we may fall in with cases of enlargement and distension of the uterus from other causes than

pregnancy ; one of these, occupying a sort of intermediate position, viz. hydatidiform degeneration of the ovum, has already been alluded to. The others are :—retention of menstrual fluid, other collections of fluid in the uterus, gaseous distension. With respect to the diagnosis of pregnancy from each of these conditions, no great difficulty is likely to be experienced. Retention of the menstrual fluid, giving rise to distension of the uterus simulating pregnancy, is almost unknown except in girls who have never menstruated at all. Hydrometra—dropsy of the uterus—is excessively rare ; so also physometra—distension with gas—is uncommon. Here only it is necessary to remark on the possibility of their occurrence, for the attending or preceding circumstances would at once indicate the diagnosis, to one alive to such possibility. The mere element of time might be sufficient to show, in a particular case, that the enlargement of the uterus could not be due to pregnancy. The point at which our investigations will or may enable us to arrive in particular cases, will be found to be either an affirmation of the pregnancy theory, or a negative to the following extent, that, admitting the possibility of pregnancy, it cannot be conceived that the tumour present is constituted entirely by the gravid uterus. Various shades and differences of the latter will hold in different cases.

The pregnancy theory will not come before us if the patient be decidedly past the climacteric age, but it will be well to bear in mind the exceptional cases of pregnancy at a late age, previously alluded to (see p. 11).

The above considerations enable us to assume that the tumour present is not due to pregnancy, to gaseous or fluid accumulation in the uterus, but they do not of course assist in carrying the diagnosis beyond this point.

The next class of cases to be considered are those in which *menstruation is present*. If the patient be menstruating regularly, and the fact be undoubted, it may be almost certainly concluded that the tumour is not due to either one of the following conditions—viz. pregnancy, distension of uterus by fluid or gaseous accumulation, abscess of the uterus.

It is perhaps necessary here to remind the reader that the conditions mentioned in the above list of uterine and ovarian tumours are not the only ones with which pregnancy may be confounded.

The condition of the menstrual discharge has enabled us to exclude from the list above given certain cases. The task now

before us is to point out the diagnosis of the conditions which remain. The state of the menstrual function will not help us further on the road with any degree of certainty. Thus, in fibroid tumours of the uterus, in carcinoma of the fundus uteri, in the various forms of ovarian disease, whether cystic alone, or composite tumours, or solid tumour, menstruation may be still regular, or comparatively so, or it may be completely absent. Presence or absence of menstruation may be thus equally observed in certain uterine and in certain ovarian tumours.

The menstruation criterion failing, we have to fall back upon the data afforded by other particulars of the history of the case, and the results of examination, abdominal, vaginal, &c.

We may dispose of several of the minor and less frequent of the causes of abdominal, uterine, or ovarian tumour, now remaining on our list, in a very few words.

Thus the *osseous tumour of the uterus* is exceedingly rare. It would only be found present in a case where the patient had been the subject of an abdominal tumour of some years' standing. Its physical characters—extreme hardness and firmness to the touch—would almost certainly point out its true nature. The only affection with which it could be confounded is fibroid tumour of the uterus; possibly also with a retained extra-uterine foetus which had undergone a process of mummification.

Carcinoma of the Fundus Uteri.—The symptoms attending the presence of this rare disease would be likely to resemble those attendant on polypus of the uteri, i. e. copious bloody discharges, leucorrhœa, but in some cases such have been wanting. The supra-pubic examination by the hand would substantiate little beyond the existence of a tumour of a rounded character, the size of which is limited (see p. 348).

We may get rid of the *simply solid tumours* of the ovary in one paragraph, with one or two reservations. It is very rare to find a *simply solid* ovarian tumour of any considerable size. Thus simple cancer of the ovary rarely produces a tumour of any magnitude, although certain *composite* tumours of the ovary, partly cancerous, may grow to an enormous size. Moreover, simple cancer of the ovary is rare, unless in cases where there is extensive carcinomatous affection of the adjacent or other parts, and consequently profound constitutional disturbance. *Enchondroma* of the ovary is a very rare disease, the existence of which even has been questioned, and it need not therefore detain us. With *simple hæmorrhagic effusions* we have no practical interest in this place. *Hyper-*

trophy of the ovaries, in the single case recorded by Dr. Bright, produced a tumour not larger than the kidney, and this was a most rare phenomenon. The *Wolfian cysts* of the ovary do not exceed the size of an orange, and they are rare. If the abdominal tumour exceed this in size, the condition may be eliminated from the enquiry. The *fibroid tumour* of the ovary is not often observed, but it may grow to a considerable size, and may be confounded with other more common ovarian diseases to be presently mentioned, and also with some uterine tumours. To *dermoid* cysts the same remark applies; they are rare, but in their physical characters, mode of growth, &c., do not present any very characteristic symptoms. They do not, unless in very rare cases, grow so large as the other more common cystic tumours of the ovary. The *hydatid* tumour of the ovary is very rare, and might be expected to be witnessed only in cases where the liver is affected, and in conjunction with symptoms of chronic or acute peritonitis. Practically, its diagnosis does not possess much interest for us in this place.

Without much difficulty, most of the conditions mentioned may be severally eliminated from the consideration. And that being done, the diagnosis now rests between the following conditions:—

Fibroid tumour of the uterus.

Polypus of the uterus.

Fibro-cystic tumour of the uterus.

Cystic disease of the ovaries, viz. simple, multiple, or compound cysts.

Composite tumour of the ovary.

Fibroid tumour of the ovary.

Dermoid cyst.

The conditions in question give rise to tumours which in many particulars resemble each other. The characters which they have in common are the following:—

The tumour is, or may be, rounded in shape.

It may be slightly movable in the abdomen.

It may have a more or less chronic course.

It may be associated with serous effusion into the peritoneal sac.

The firmness and resistance of the tumour may be equal in each.

The size of the tumour does not, unless in the case of a very large tumour, offer any help in the discrimination.

It is quite true that generally we find marked differences in respect of some of the foregoing characteristics; but these differ-

ences are not always so considerable, and by relying too implicitly on distinctions of this kind mistakes are frequently made.

The diagnosis between the various pathological conditions just mentioned is to be made by careful external and internal examination, and by consideration of the previous history. We have now no scruples as to using the uterine sound, having excluded pregnancy from the consideration by the previous analysis.

In many cases certain characters of the tumour, as felt through the abdominal parietes, are conclusive as to its ovarian origin; one of these is, presence of *distinct fluctuation* from one border of the tumour to the other. If the tumour were constituted by a fibrous tumour of the uterus, or polypus of the uterus, there could be no fluctuation. Fluctuation of this kind might be observed in that rare disease, fibro-cystic tumour of the uterus. It is hardly necessary to mention that we are presuming that all cases of ordinary ascites, or of ascites combined with tumour, or of distended bladder, have been excluded from the question by following the instructions contained in the preceding chapters. The *absence* of fluctuation does not, however, indicate that the tumour is not ovarian.

If we examine the uterus from the vagina digitally and by means of the sound, and clearly ascertain that the os is natural, that the cavity of the uterus has its normal length, the conclusion to which we may come as regards the diagnosis of the tumour before us is, that it cannot be a polypus of the uterus; but this is the extent of the knowledge afforded. Polypus of the uterus may be excluded in other ways from the consideration. Thus, the previous history in cases of polypus is usually one of occasional hæmorrhages, profuse menstruation, leucorrhœa, &c. The tumour, when due to such a cause, is very hard, externally it has the shape of a pregnant uterus, it is rare that it exceeds in size the gravid uterus of six or seven months, and the presence of a tumour *within the uterus* is generally plainly to be made out by a digital examination from the vagina and by the use of the sound. In some cases the polypus partially occupies the vagina. The diagnosis, so far as regards the exclusion of polypus of the uterus from the list above given, is generally easy. The diagnostic signs are in brief as follows:—there is a hard, smooth, well-defined, abdominal tumour of slow growth, the uterus evidently enlarged from the vagina, its cavity greatly lengthened, a hard tumour is perceptible within the uterus.

But it is not so easy to distinguish fibroid tumours of the uterus of large size from others of the above tumours not uterine in origin, and there is in fact very considerable difficulty frequently encountered in making a diagnosis between them. It will now be pointed out how these difficulties may be best surmounted. Incidentally it will be shown that it is useless to attempt to distinguish the ovarian tumours *inter se*, until we have thus separated the uterine and ovarian tumours one from the other.

They have the following characters in common:—the pelvic cavity may be found distended by a tumour firm to the touch in both cases. The abdominal tumour may be firm to the touch in both cases. It may be of slow growth in both cases. It may be rounded, smooth, and have a tolerably uniform surface, in both cases. The disturbance of the functions of menstruation and defæcation may be equal. In the shape of the tumour we find no absolutely distinguishing sign.

Let us pursue the investigation further. Supposing that by examining *externally* through the abdominal walls we are able to detect fluctuation in places, or even supposing that we find that in certain parts the tumour is softer and not so resistant as at others, this would enable us to say the tumour is of ovarian origin. To this statement there is one single reservation—that if the rare fibro-cystic tumour of the uterus were present, the sign in question might prove deceptive. The absence of such partial fluctuations, or of such partial softness, does not, however, prove that it is uterine. Or, supposing we found the surface of the tumour very unequal, presenting hard, smooth, rounded, distinct elevations three or four or more in number, and varying in size from that of a walnut to, that of an apple or larger—these elevations being evidently integral parts of a central mass, the consistence of which is identical with that of the elevations—this would prove it to be a case of fibrous tumours of the uterus. On the other hand, in the case of very large fibrous tumour, the surface is quite smooth and uniform, and irregularities and eminences of the surface are then quite wanting.

The *internal* examination as a means of discriminating between ovarian and uterine tumours must now be considered. What has been previously mentioned respecting the diagnosis of tumours felt through the vaginal walls (see p. 196) may be consulted with advantage, but the more salient points must be here again briefly mentioned.

And before going further, we must describe what may be termed

the natural history of an ovarian or extra-uterine tumour, so far as relates to its growth and the effect of that growth on the position of the uterus.

A fibrous tumour growing on the peritoneal surface of the uterus, and reaching a large size, and an ovarian tumour, may affect the uterus in like manner. Thus the fibrous tumour may in its growth carry the side, or back, or front of the uterus—according as it may happen to be placed—along with it; the cavity of the uterus may be thus, in the case of a very large fibrous tumour, very considerably elongated; or, it may leave the cavity of the uterus unaffected, the body of the uterus undergoing not an expansion but an actual atrophy, and under such circumstances the small atrophied uterus is flattened and pressed downwards into the pelvis, while the large fibrous growth mounts up into the abdomen. It is evident that the internal examination by the sound will reveal correspondingly different signs, according as one or other of the events mentioned happens. Take next the case of an ovarian tumour. Here the circumstances are precisely analogous. The ovarian tumour, in its growth up into the abdominal cavity, either draws the fundus uteri up with it, thus necessarily lengthening the uterine cavity, or it presses the whole uterus downwards, the length of the uterine cavity being in nowise altered. Again, whereas it most commonly happens that the ovarian tumour presses the uterus forwards while engaged in elongating it, the reverse may be the case, the uterus being sometimes posterior, and the pelvic part of the ovarian tumour anterior; or, the pelvic part of the ovarian tumour may push the uterine fundus to one side of the pelvis, elongating its cavity at the same time. Another effect which may be produced on the uterus during the growth of an ovarian tumour, is, propulsion downwards of the lower segment of the uterus concurrently with dragging upwards of the superior segment. This may happen when the ovarian tumour fills the pelvis and grows there, at the same time that it grows also upwards into the abdomen.

And now, with the above facts before us, the value of the signs derivable from digital examination *per vaginam*, and from the use of the sound, will be more intelligible.

If there be a large tumour in the abdomen and the sound pass into the uterus for a distance of three inches or upwards, and the cavity of the uterus be found more anteriorly than it should be, this will probably indicate its ovarian nature, but not certainly, for it may be a case of large fibrous tumour growing behind the uterus.

The history of the case will now probably throw light on the subject. Thus, if the abdominal tumour increase quickly, it is ovarian (the reservation being again made as to presence of the rare fibrocystic tumour of the uterus); or if the abdominal tumour be distinctly fluctuating, it is ovarian. It will be well to recollect that the sound might pass in this direction and in this manner in a case of large polypus of the uterus. In a case which not long since came under my notice, the vagina was drawn upwards and ended in a cone just behind the os pubis; the cervix was obliterated so far as its vaginal portion was concerned, and the sound entered for upwards of three inches. There was a hard unyielding tumour felt behind the vagina, extending upwards into the abdomen. My first impression about this case was that it was a large fibrous growth from the posterior part of the uterus; but having examined the abdomen, and finding there a tumour which was as large as the head of an adult, the diagnosis made was that the tumour was ovarian; and this diagnosis has been justified by the rapidity with which the abdominal tumour has since increased in size. Again, another case may be mentioned to show particularly how the diagnosis is made, and on what data it rests. I was required, in Dr. Tyler Smith's absence, to examine a woman in St. Mary's Hospital who had an enlarged abdomen. The patient, æt. 26, had been married four years, never pregnant, abdomen greatly enlarged, suffering severely from dyspnœa; she was very weak and ill. Catamenia absent for eight months, but there had been a slight show fourteen days before. Examining *per vaginam*, the uterus was found to be small, atrophied, flattened, and pushed a little downwards; its long axis lay horizontally instead of nearly vertically; above it was a tumour. Examining through the abdominal walls, there was found to be marked fluctuation below a line extending from the splenic region to the right crista ilii, tumour well defined by percussion, but not by palpation. The diagnosis was, ovarian dropsy. The vaginal examination showed absence or enlargement of uterus, the abdominal showed fluctuating, distinct tumour; the results of the two methods of examination indicated clearly the diagnosis. These two cases are not mentioned because they presented anything remarkable in the way of difficulty—rather the reverse.

To appreciate more particularly the value of the indications given by the sound, we may divide our cases into two classes—those in which the uterine cavity is found decidedly elongated, and those in which it is not. The cavity may be decidedly elongated,

as above stated, from a fibrous growth of the uterus or from presence of an ovarian tumour. In all cases it is not possible during life to diagnosticate between these two conditions, judging at least from the fact that very eminent observers have not always avoided falling into error on this point; but generally the attendant circumstances enable us to do so pretty easily. In the second of the cases above related, the fluctuation of the abdominal tumour, its rate of growth, and absence of uterine enlargement, were conclusive; in the first of the cases, the rate of growth too was one of the points which were of importance. But we sometimes meet with cases where the uterus is lengthened, the tumour so close to the uterus as not to be separable from it; where the tumour grows slowly; and where, nevertheless, the case turns out to be ovarian. When the tumour grows rapidly, this is in favour of its ovarian nature, but the absence of this rapidity of growth does not prove the contrary. To mistake a uterine for an ovarian tumour is to commit an error of greater importance than a mistake of an opposite kind, for the reason that serious operations are undertaken when the tumour is supposed to be ovarian, which would not be contemplated if the tumour were considered uterine. The following are the most reliable distinctive signs in a case presenting difficulty :—

For ovarian tumours, are, rapidity of growth, impediment of the circulation in the lower extremities, evidenced by presence of œdema, varicose state of veins, severe constitutional disturbance, e. g. great weakness and debility, emaciation, and pelvic continuous pain. These signs are in fact the signs usually present in cases of solid tumour of the ovary of cancerous nature, or in cases of cystic cancer, where the growth happens to be for a time stationary. Absence of such signs is, however, not so strongly evidence of a negative kind, for some chronic ovarian tumours give rise to very little mechanical or other disturbance. If, in a case of elongation of the uterine cavity, the sound passed quite into the centre of a large tumour, this would almost, but not quite, conclusively indicate its character. If the sound passed laterally, or marginally as it might be termed, as regards the tumour, and the tumour were felt from the vagina to be fluctuating, this would favour the theory of its ovarian nature.

The cases in which there is no ascertainable elongation of the uterine cavity come next. Here the diagnosis between ovarian and uterine tumours is not usually attended with so much difficulty. The tumour, if uterine, is most likely to be a large slow-growing

fibrous tumour, causing little inconvenience except from the great size to which it may attain. If the tumour were fluctuating, as ascertained by a vaginal or abdominal examination, it could not be uterine—the rare fibro-cystic tumour of the uterus being excluded from consideration—but if there were no fluctuation, considerable difficulty might be experienced in deciding whether the case was one of large fibrous or other solid tumour of the ovary, or a fibrous semi-pedunculated tumour of the uterus. There are, in fact, no signs enabling us positively to distinguish between them.

It will be found that in some cases in which, theoretically, difficulty might have been anticipated, no such difficulty occurs, and we are able at once to say the case is not uterine. This conclusion is most safely come to when we are able, by the use of the hand, or by digital examination, one or both, to separate the uterus from the tumour.

It must be recollected that sometimes the uterus becomes imbedded in and surrounded by a mass of disease of ovarian origin. The composite tumours of the ovary occasionally grow in this manner. The signs afforded by use of the sound might, in such a case, lead to the supposition of uterine disease; the *general* symptoms would usually be of ovarian character.

Having made use of the sound, having carefully examined the abdomen in the hypogastric region, what is the result at which we may expect to arrive in the diagnosis of uterine from ovarian tumours? It is probable that the number of cases in which insuperable difficulties occur in arriving at a correct judgment on this point will year by year become less, but it is the fact, nevertheless, that the cases are not few in which an erroneous diagnosis has been made. There appear to be some cases in which the diagnosis is really impossible; but it fortunately happens that these are not often cases in which the decision is of vital consequence. The difficult cases are those in which a slow-growing, not large, tumour exists, which it is just as probable is ovarian as uterine. A pedunculated or even a sessile fibrous tumour of the uterus may occupy the same position, present the same physical signs, produce even the same symptoms, as a fibrous or solid tumour of the ovary. We may make a diagnosis which is an infinitely probable one, but which it is just possible *may* be wrong, viz. that the tumour is uterine because an ovarian tumour of this kind is so rare; and this is all we can do or may be able to do in such a case. If we encounter a tumour of this kind at an early period of its growth, and before there has been afforded an oppor-

tunity of knowing whether it be a slow-growing tumour or not, the diagnosis is still more difficult, for then the tumour may be a non-fluctuating specimen of ovarian cystic disease, or any one of the other varieties of ovarian disease, or it may be a uterine fibrous tumour. The nature of such cases can only be definitively diagnosticated by waiting, unless indeed we use a grooved needle and endeavour to obtain thus some notion of the nature of the contents of the tumour. When the necessity for a diagnosis of this kind arises, the tumour is generally a pelvic one, not having yet passed up into the abdomen.

Looking carefully over the records of cases where mistakes have been made in diagnosis—where ovariectomy, for instance, has been attempted, but the tumour found to be uterine—it will be seen that the element of ‘time’ was not allowed to have its due weight in the decision arrived at prior to the commencement of the operation. Thus in one case the tumour found to be ‘uterine’ had existed for four years; in another there was a cyst connected with the uterus of eight or nine years’ duration; in another a ‘large fleshy tubercle of the uterus’ of ‘many years’ duration; in another a solid vascular tumour connected with the uterus six years.* It is probable that in these cases the tumour was solid, at all events non-fluctuating, and it is likely that similar mistakes may be avoided in future, when hard tumours simulating ovarian tumours are present in the abdomen, by attention to the diagnostic value of this element, time.

FIBRO-CYSTIC TUMOUR OF THE UTERUS.

By way of conclusion to these remarks on the diagnosis of uterine from ovarian tumours may be mentioned some particulars concerning the rare fibro-cystic tumour of the uterus. In a case of this disease observed by Mr. Prescott Hewett, the age of the patient was 47; there was a large tumour occupying the lower two-thirds of the abdomen, rising out of the pelvis and displacing the intestines. Its upper part was composed of large membranous-looking cysts with thin walls, one of which had been tapped during life. Below, it was composed of solid substance and an enormous number of cysts, in size from a pin’s head to that of an orange. Both ovaries were sound. The tumour sprang from the right side of the fundus uteri, and was attached by a pedicle. The growth of the tumour had been observed during a year; there were

* See Mr. Clay’s *Tables of Ovariectomy, &c.*, in his *Translation of Kiwisch*.

œdema of the legs and dyspnœa.* In a case, the particulars of which were recently communicated to me by my friend Mr. F. D. Fletcher of Liverpool, a growth of this kind was taken to be an ovarian tumour, and the operation of ovariectomy decided on. After the abdomen was opened, the nature of the case was made evident. Mr. Fletcher removed the tumour, nevertheless, by means of the *écraseur*, and the patient recovered. An interesting specimen of the disease was recently exhibited by Mr. Nunn at the Pathological Society, taken from a patient who had been under the care of Mr. Baker Brown.

These cases are very rare, and it seems almost impossible to say how they are to be distinguished from cases of ovarian tumours during life, the physical signs and the symptoms so closely resembling those observed when composite tumours of the ovary are present.

* Quoted in Mr. Baker Brown's work, 2nd ed., p. 310, from *Lond. Journ. Med.*

CHAPTER XV.

TUMOURS TRACEABLE INTO THE PELVIS (*continued*)—DIAGNOSIS OF THE NATURE OF AN OVARIAN TUMOUR.

Enumeration of Ovarian Tumours—Complications—The Diagnosis as affected by the Duration of the Tumour—The Condition of the Surface—Differential Diagnosis of the smaller Tumours of the Ovary—Distinction between the Compound Cystic and the Composite Tumours—Tapping, or Tapping combined with Internal Use of a Probe, as a Means of Diagnosis.

THE diagnosis having been advanced so far that we are able to pronounce the tumour present to be of ovarian character, it remains to determine more precisely the nature of the tumour.

It will be unnecessary to consider here the smaller and less important of the tumours originating in the ovaries; the remarks previously made enable us to dispense with this, and we shall now only consider the diagnosis of those which are practically important, and which may attain great magnitude, or at least produce considerable and marked enlargement of the abdomen.

The ovarian tumours now before us include:—

Simple, multiple, and compound cysts.

Composite tumours, viz. cystic sarcoma of ovary, alveolar degeneration, cystic cancer.

Solid tumours, viz. fibroid tumour, dermoid cyst, scirrhus.

In addition to the conditions in the foregoing list, a diagnosis of the nature of an ovarian tumour will not be complete which does not have regard to the complications liable to be observed. One of the most common of these is *ascites*; another, the existence of which is, however, more liable to be overlooked, is *pregnancy*.

The diagnosis of the several ovarian tumours above mentioned, one from another, is sometimes easy, at other times extremely difficult, at other times again simply impossible, by any kind of examination we may devise, short of exploration by means of tapping, and in some cases we cannot even then obtain such a perfect knowledge as may be desirable. In the majority of cases, however, we can get as much information as is needed to enable

us to decide as to the treatment. Attention is now directed simply to the determination of the *pathological* character of the tumour. There is another kind of diagnosis, a sort of mixture of diagnosis and prognosis, the consideration of which will come under the head of 'Treatment.'

The Duration of the Tumour.—It will be usually found practicable to reduce the list of possible conditions in the case before us, by attention to the prominent characters of the history, progress, and physical characters of the tumour. Thus, if we find the tumour has been growing rapidly, and has only dated from, say a year previously, we may pretty safely exclude from consideration the simply solid tumours of the ovary, i. e. fibrous tumour (which is moreover a very rare affection) and dermoid cyst. If the tumour has been growing slowly, say three years or longer, and the subject of the case be a young or, at all events, not a very old woman, this would lead us to consider the possibility of the case being one of dermoid cyst; if on examination, under such circumstances, a distinctly fluctuating tumour is ascertained to be present, this would militate against such a view of the matter; but if the tumour is found to be non-fluctuating, it may be either a case of dermoid cyst, or a case of composite tumour, or, possibly, of compound cyst of the ovary unusually slow in growth. A slow-growing, non-fluctuating, well-defined, smooth tumour, which on other grounds has been determined to be 'ovarian,' in a woman not old, is more likely, however, to prove to be a dermoid cyst than anything else. Judging from experience, the actual diagnosis of these dermoid cysts during life and before operation is not easy, and this is partly due to the fact that this condition is sometimes met with in association with the more ordinary form of cystic disease of the ovary. Respecting the fibrous tumour of the ovary, it is to be remarked that its diagnosis from other tumours of the ovary is not so difficult as its diagnosis from uterine pedunculated fibrous tumours. Its very slow growth, hardness, and well-defined outline, are the principal characteristics.

When we have before us a case in which the abdomen has become markedly enlarged in the course of the previous year, this enlargement being due to the ovarian tumour alone, and not partially to ascitic effusion superadded, we may nearly safely leave fibroid tumours and dermoid cysts out of the consideration. The further diagnosis is guided by the size, the consistence, the resistance, smoothness or inequality, rapidity of growth, of the

tumour, by the symptoms to which it gives rise, and by the general condition of the patient's health.

We may take the chief of these criteria one by one, and ascertain what information is to be procured from them as to the nature of the tumour.

The *condition of the surface of the tumour* affords, necessarily, more information respecting the physical character of the tumour than can be obtained in other ways. Supposing we find the tumour perfectly smooth and uniform, and offering equal resistance at all parts of its superficies, whether felt from the vagina or through the abdominal walls, such a tumour is likely to be made up of one large cyst. To confirm this view of the case, we might have the additional fact that the tumour presents fluctuation from one side to the other, and from above downwards. We might not get fluctuation, and nevertheless the case may be still one of simple cyst, for fluctuation cannot always be made out when the cyst is very tight. Thus the fluctuation test might or might not be available. A smooth uniform tumour, not fluctuating in the manner alluded to, might prove to be one of compound cysts of the ovary, one large cyst being the common covering for a large number of smaller cysts within it. The fact that the tumour is large, smooth and uniform as regards its surface, even when fluctuation is absent, is presumptive evidence that the tumour is not a composite tumour of the ovary; it is more likely to belong to the other series, though on this point there is no absolute rule. Sometimes we find that while, generally speaking, the tumour is smooth and rounded, the hand, slightly passed inwards, encounters one or more rounded bodies *within* the larger tumour. This is a condition of things only met with when there is one large cyst, not tightly filled with fluid, and having within it other cysts; and under such circumstances we get therefore more information as to the nature of the interior of the tumour. Care must be exercised not to confound with this condition one which rather closely resembles it, viz. the combination of ascites and ovarian tumour. Such a mistake could only be the result of great carelessness, but still it might be made. An event which is quite possible, is that there may be a large cyst giving the fluctuation sign at all parts of the surface, and which therefore conveys an idea that the whole tumour is made up of this cyst, whereas it may prove afterwards that within this cyst is a considerable mass made up of several smaller cysts. The circumstances are sometimes such, that until a portion of the fluid in the large containing

cyst is evacuated by tapping, the true nature of the case cannot be made physically evident.

On the other hand, when we find the tumour *unequal* as regards its surface, we draw inferences which may be approximatively stated as follows:—If the tumour present a large rounded eminence at one point, a second eminence of a like character at another, the depressions between forming divisions across which fluctuation is not transmitted, and we find the tumour to be made up of two or three such large eminences, the whole forming a tumour which possibly extends up to the umbilicus or some way beyond it, then we have probably to do with a case of multiple cyst of the ovary, or possibly there may be a tumour growing from both ovaries. Fluctuation evident at all parts of the surface, limited as above stated, would be evidence nearly conclusive that the case is not one of compound cysts, or one of composite tumour. Absence of such fluctuation might be due to great tightness of the cysts, or to great thickness of the walls of the cyst, to the presence of jelly-like contents; or it might be that each of the large cysts contained other smaller ones.

To take another case:—we find the tumour unequal as regards its surface, it presents a rounded eminence at one part, and fluctuation is here evident; while close to it is felt a portion of the surface harder and more resistant; at other situations the surface is perhaps still more irregular. Such a condition might be due to presence of compound cysts, or to presence of a composite tumour, either cystic sarcoma, or alveolar degeneration, or cystic cancer of the ovary; or there might be tumour of both ovaries. Rounded nodular eminences on the surface of an otherwise smooth tumour, may indicate either presence of small cysts at the situations in question, or of cancerous nodules; but we may draw one important inference from their existence, viz. that either the mass beneath these nodules is composed of solid matter of some kind or other, or that the whole tumour is a compound cystic one: the growth of small cysts on the surface of simple cystic tumour, or multiple cystic tumour of the ovary, is not common.

It is only in the case of rather small tumours, e.g. tumours not exceeding the size of the head of an adult, that much difficulty is found in determining, approximatively at all events, the physical construction of the tumour. When the tumour is of large size, if it be a case of simple or multiple cysts, there is evident generally, at some period or other, fluctuation, and the surface is smooth and comparatively even. But in the case of a large com-

posite tumour, or in the case of a large compound cystic tumour, there is at some situations a marked peculiarity as regards the surface, in respect to the consistence and degree of resistance of the kind above alluded to. The diagnosis of the nature of the smaller tumours requires a more particular examination. It has been already stated that a moderate-sized rounded tumour, in which fluctuation is not evident, may be either a simple cyst with very tight walls, having very dense contents, or a tumour of compound or composite nature. The tumour may be irregular on the surface or not: if irregular, this will help us in the way previously remarked, but if not, the diagnosis has to rest on other data. Under such circumstances something is often to be made out from the general view of the case, apart from the physical characters of the tumour. Rapidity of growth, in the case of a non-fluctuating tumour, would incline us to believe it to be one of compound cysts or a composite tumour. 'Rapidity of growth' may be considered to be present if, in the course of six or eight months, the tumour has attained the size of a pregnant uterus of seven or eight months' gestation. Rapidity of growth, alone, means nothing, for we see repeatedly that large cysts, after being emptied by tapping, refill in a very short space of time; but if we have before us a non-fluctuating tumour, the fact is of some importance in determining the construction of the tumour.

Is there anything which can be learned from the *position* of the tumour, as to whether it be a purely cystic tumour, or a compound cystic tumour, or a composite tumour? Nothing absolutely. We may find a large semi-cystic tumour occupying the abdomen, and not at all engaged in the pelvis (the more common event); or we may find a part of such a tumour in the pelvis, and a part in the abdomen. And if the tumour be made up of compound cysts, or if it be a composite tumour, we may find a portion of the same in the pelvis, or the whole may have passed upwards into the abdomen.

We may now consider the diagnosis of that class of cases in which, having made out by previous examination that the condition present is either 'compound cystic tumour' or composite tumour—the latter including the cystic sarcoma, alveolar degeneration, and cystic cancer—it is considered desirable to pursue the analysis still further. Speaking of these cases generally, it is to be remarked that in each the growth of the tumour may be very rapid, but it is not necessarily so. In each of them there is cyst growth going on, which growth may proceed with different degrees

of vigour at different parts of the tumour. The superficial part of the tumour may be therefore solid to the feel, or it may be chiefly cystic. The degree of resistance communicated to the touch is not the same in all cases, even when the tumour is identical; and during life no very precise differentiating indications can be drawn from data of this kind. The degree of hardness may not in a case of cystic cancer be very different from that present in a case of compound cyst. We may often, however, learn something from the condition of the surface of the tumour. Thus the presence of hard knobs or excrescences on the surface is presumptive evidence for cystic cancer, if we find they are unlike small cysts in shape or other physical characters. Absence of such knobs is not conclusive of the non-cancerous nature of the tumour. Again, the association of ascites in these cases is of some importance. Ascites may be present in association with all kinds of ovarian tumours, but it is more frequently found to be present when the ovarian tumour belongs to one of the series now under consideration; it is most common when the tumour is composed of cystic cancer. And hence, when the tumour presents knotty hard elevations, and there is ascites, a suspicion would arise that the tumour is of a cancerous nature. The other points to which attention should be directed, for confirmation or otherwise of this suspicion, are of a general character. The more simple cystic disease of the ovary produces, at first certainly, but little effect on the health of the patient; but in the case of cystic cancer of the ovary, we find that although the tumour is not very large, and has possibly not existed a very great length of time, yet the health of the patient has notably given way.

The cystic cancer of the ovary has ordinarily a course differing from cystic sarcoma. The latter often grows persistently, and with such great rapidity that the whole abdomen may become, in a short space of time, distended to the utmost by a mass made up partly of cysts, partly of a sarcomatous substance. In cystic cancer the tumour is not so large. The alveolar degeneration occupies a medium position between the true cancer (cystic cancer), and the sarcomatous growths with cysts, both in regard to the size it may attain, and in reference to the intensity of the symptoms.

The 'compound cyst' tumour of the ovary, on the other hand, presents characters somewhat allied to those observed in more simple cystic disease; but there is great variability; and this arises from the fact that the tumour remains, sometimes, quiescent for a

time, and then, perhaps suddenly, starting into active growth, produces rapidly enormous enlargement of the abdomen.

Possible Complications of Ovarian Tumour, to be considered in arriving at a Diagnosis.—When an ovarian tumour rapidly increases in size, the question should always occur—Is the enlargement due to *pregnancy*? If the tumour be of a solid character, or partly so, this is more important, but in all cases the first question which should be determined has reference to the possibility of pregnancy having supervened. Proper means must be taken, by vaginal examination, auscultation, &c., to decide this question. Experience has shown that the mistakes which have been made in undertaking operations in ignorance of the presence of pregnancy, have arisen, not from the inherent difficulties of the diagnosis, but from circumstances generally controllable.

Ascites is another complication which is rather common. It is more frequently present when the ovarian tumour is irregular in outline than when the shape is more rounded and equable. It is sometimes necessary to get rid of the ascitic fluid by tapping, in order to explore satisfactorily the ovarian tumour.

Another important though rare complication of ovarian tumour is presence of gas within it. Sometimes an ovarian cyst bursts into the intestinal canal, and gas enters the cyst. Thus an ovarian tumour, one day dull on percussion and fluctuating, may on another be found to have become tympanitic. The occurrence is rare.

Tapping as a means of Diagnosis of the Nature of a presumed Ovarian Tumour.—Under some circumstances it is necessary to tap an ovarian tumour in order to release the patient from suffering; at other times this operation is undertaken as a curative measure alone, or combined with other proceedings which will be discussed in their proper place. At other times, again, tapping is had recourse to in order to throw further light on the diagnosis.

The tapping, when performed for the former of the above reasons, can be always made subservient to the further diagnosis of the nature of the tumour.

An important piece of information relates to the nature of the *contents* of the tumour. Sometimes when tapping is performed it happens that no fluid can be made to pass through the canula on withdrawal of the trochar. This may be due to great viscosity of the contents, or to the fact that in the interior of the tumour there are a multitude of small cysts, or to the circumstance that the tumour is of a solid nature. By passing a probe through the canula something more may be learnt. The fluid which comes

away is different in different cases, as already stated, and it does not appear that examination of the fluid affords any particular indication as to the kind of ovarian tumour present. To this there is one exception in the case of the dermoid cysts of the ovary, which contain often a fluid which has this peculiarity, that on cooling it undergoes transformation into a solid mass resembling butter. Presence of such fluid would show that we have to do with a dermoid cyst. In a case related by Dr. Alex. R. Simpson,* there was removed from an ovarian cyst of this kind a single red hair, and it was subsequently found that the cyst contained a mass of tangled hair. It was further noticed that this hair had the same colour as that covering the pubes of the patient.

In cases of the more common kind, however, the nature of the fluid will not inform us as to the nature of the ovarian tumour.

To distinguish between an ascitic and an ovarian fluid is important. Ascites and ovarian dropsy should be distinguished on other data (see p. 320) than an examination of the fluid procured by tapping, but it is necessary to state what differences between the two fluids may be expected to be found. Mr. Brown† has, in conjunction with Mr. Nunn, examined into the question of the *microscopic* diagnosis of ascitic from ovarian fluid, and gives the results of Mr. Nunn's enquiries; they are to the following effect:—The most constant characteristic of ovarian fluids is, that they contain, in greater or less abundance, cells gorged with granules, and, in addition, circumambient granules. These cells and these granules vary greatly in size even in the fluids from different cysts of the same ovary: the fallacies involved in a dependence on these characters for a diagnosis are, that the ovarian fluid may have burst into the abdomen, become ascitic in fact, and thus mingled with peritonitic effusion; further, lymph and pus are not uncommonly found in ovarian cysts—hence a microscopical examination of the fluid may serve to strengthen an opinion, but alone ought not to decide one.

If, after tapping and emptying an ovarian cyst, we find the whole of the ovarian tumour gone, we may reasonably conclude that the case is one of simple ovarian cyst. Frequently it happens that immediately after tapping there is evidence of the existence of a second cyst, or of a solid mass or masses which were not perceptible before, and of whose existence as parts of the tumour we could not otherwise have been informed and a case which at first appears to

* *Ed. Med. Journal*, March 1862, p. 886.

† *Op. cit.* 2nd ed. p. 301.

be one of simple cystic disease may thus prove to be one of compound cystic tumour, or of composite tumour of the ovary. In order to diagnosticate more particularly the nature of fluctuating tumours of the abdomen in conjunction with the operation of tapping such tumours, I devised, some time since, an apparatus for probing the interior of the cavity containing the fluid. It consists of an ordinary canula, which is provided with a perforated diaphragm of india-rubber. The canula, armed with a trochar, is thrust into the tumour, the trochar is then withdrawn and replaced by a long metallic probe having the thickness of the ordinary uterine sound, thirteen or fourteen inches in length, and having a rounded blunt point. The india-rubber diaphragm tightly grasping the probe prevents escape of fluid, and the observer is now in a position leisurely to examine thereby the interior of the cavity, to ascertain its dimensions, its shape, the size and configuration of the solid contents, &c.* Such probing is of course only possible when the cavity is full of fluid. In a case of ascites mistaken for ovarian dropsy, the use of this instrument would inform the operator of his error. In a case of ascites with ovarian tumour the relations of the latter could be more readily made out than by examining the tumour in the ordinary way after evacuation of the ascitic fluid. Further, when there is a large cyst containing fluid and extending down into the pelvis, a combined digital vaginal examination and an internal probing such as above described would, in some cases at all events, give information as to the presence of other smaller cysts in the lower border of the tumour of whose existence we could not otherwise obtain a knowledge. This latter circumstance seems important, for the reason that our curative procedures may vary according as we find evidence, or no evidence, of presence of smaller cysts growing upwards from the ovary.

If after tapping we find a tumour still remaining, this may be another cyst from the same ovary, contained within the first, or simply in juxtaposition with it; or it may be a solid tumour or mass of cysts; it may be a cystic tumour of the other ovary, or it may be a tumour of the uterus. The diagnosis of this secondary tumour should be made carefully and with due consideration of the possibility of pregnancy.

* For a detailed description of this instrument see *Obstetrical Transactions*, vol. for the year 1859.

CHAPTER XVI.

ABDOMINAL TUMOURS NOT DISTINCTLY TRACEABLE INTO THE PELVIS.

Pedunculated or Transplanted Fibroid Tumours of the Uterus—Movable Kidney—Fat in Omentum—Ascites together with Tumour of Uterus or Ovary—Fæcal Tumour—Cancer or Cystic Disease of Omentum.

IN the previous chapters the diagnosis of tumours traceable into the pelvis has been pointed out. To complete the subject of the diagnosis of abdominal tumours, it is necessary now to consider those cases in which there is a tumour in the abdomen not traceable into the pelvis.

It will not be necessary to enter at any length into the consideration of the diagnosis of tumours in the abdomen not traceable into the pelvis, inasmuch as the subject is one scarcely coming within the compass of the present work. There are, however, some tumours of the abdomen which cannot be traced into the pelvis, and yet have their origin in the generative organs, concerning which some mention is required.

Fibrous tumours of the uterus sometimes become pedunculated, and the pedicle elongated to such an extent that they enjoy great mobility and freedom of movement. It might be difficult to say of such a tumour very positively whether it belonged to the uterus or to the ovary.

The fibroid tumours of the uterus, when growing from its peritoneal surface, may become detached from the organ, and remain fixed at any part of the abdominal parietes. When so fixed and separated from the uterus, the diagnosis of the nature of such a tumour would be necessarily difficult. It appears that the ovary also may become separated from its attachment by twisting of or dragging on the Fallopian tube, and that it may similarly become attached to some other part of the abdominal wall. The occasional occurrence of separation of fibroid tumours, or of the ovary, from their normal attachment, is a cir-

cumstance to which attention has only recently been directed by Rokitansky * and Turner.†

A pedunculated fibroid tumour of the uterus might be confounded with that very rare condition, *movable kidney*, the rounded shape and the firm feel of the tumour being observable in both cases. The diagnosis of a fibroid tumour, detached and transplanted as above pointed out, would not be easily made out.

Cases in which the *omentum* is the seat of a considerable deposition of *fat* occasionally create embarrassment as to their diagnosis. It might be difficult to ascertain whether the tumour perceivable was actually traceable into the pelvis or not, owing to the, usually associated, fatty condition of the abdominal parietes; such tumours are most liable to be confounded with pregnancy, as already pointed out.

An exceptional case here requiring mention is the presence of a tumour due to an *extra-uterine foetation*, and so situated as to give the idea that it is not traceable into the pelvis.

A difficulty is more frequently experienced in determining whether the tumour proceeds from the pelvis or not, in cases where solid tumours of the uterus or ovary are associated with *ascites* to an extreme degree. This class of cases has already been alluded to, in speaking of the diagnosis of the causes of considerable enlargement of the abdomen with the fluctuation sign present.

Some cases of *faecal tumour* may give rise to difficulty when the tumour is situated low down. The observations already made on the diagnosis of faecal tumour here again apply.

Cancerous or cystic disease of the omentum, forming a tumour of considerable size, may closely simulate tumour originating in the pelvis. Ovariectomy has been attempted in some such cases. The surest means, perhaps, of avoiding similar errors of diagnosis in future is to indicate, as has now been done, the possibility of their being committed. If ascites were superadded in such a case, the difficulty would be greater. Attention to the mode of growth of the tumour would be most likely to give satisfactory information.

In all cases where doubt exists as to whether the tumour extends into the pelvis, the history of the case is of great consequence. It generally happens that tumours of ovarian and uterine origin do, at some period or other of their growth, give rise to what may be termed pelvic symptoms—difficulty in defæcation or

* See Schmidt's *Jahrb.* vol. cx. p. 306.

† *Edinb. Med. Journ.* Feb. 1861, p. 698.

micturition, pains in the lower limbs, &c. &c., and absence of such pelvic symptoms, therefore, would be against the theory of pelvic origin of the tumour, though on these grounds alone it would not be safe to come to a conclusion. We should, however, certainly hesitate to perform ovariectomy in a case where pelvic symptoms had been absent from first to last, unless there were very good grounds for believing the tumour to be ovarian.

CHAPTER XVII.

EXAMINATION OF THE BREASTS IN REFERENCE TO THE DIAGNOSIS OF PREGNANCY.

ALTERATIONS IN THE SIZE AND TEXTURE OF THE BREASTS.—Distinction between Enlargement due to Pregnancy and to Deposition of Fat—Other Causes of Enlargement.

CHANGES VISIBLE TO THE EYE.—The Nipple; Enlargement; Presence of a Milky Fluid—The Areola; Changes in Colour, in Size; Presence of Glandular Follicles; Secondary Areola—Enlarged Veins—Cracks in the Integument—General Summary.

THE examination of the breasts furnishes us with very important data for the diagnosis of certain conditions or diseases. In cases of suspected pregnancy, the appearances presented by these organs offer not rarely decisive evidence for or against the supposition, as the case may be; provided always that the observer be experienced in the matter, and has so familiarised himself with the usual appearances and changes in these organs produced by pregnancy, as to be able to distinguish them, and to assign a due value to the particular changes noticeable in the case under examination. Such familiarity can only be acquired by practice and careful observation.

The diagnosis of pregnancy from an examination of the breasts is not always possible, but in many cases it is so; and, as remarked by Dr. Earle, in a very valuable monograph recently published by him,* the signs of pregnancy observable in the breasts have the peculiar value, that while from a variety of causes an examination of the abdomen or vagina is often not obtainable, there is never any difficulty in procuring an examination of the breasts.

The changes observable in the breasts may be considered under the following heads:—alterations in the size and texture of the breasts; and alterations visible to the eye only.

* *On the Mammary Signs of Pregnancy and Recent Delivery.* London: Davies, 1862.

1. ALTERATIONS IN SIZE AND TEXTURE.

A swelling of the breasts is popularly considered a good sign of pregnancy. As will be now shown, however, it is a sign which is not in any way to be depended upon. As a rule, the breasts increase in size during pregnancy, and they begin to increase in size usually at a very early period; but many other causes may produce a like increase in the size of the glands. The increase in size may be due simply to *fat*. The fact that the other parts of the body participate, or not, in the increase of the fatty deposit, would assist us in distinguishing the true nature of the enlargement in such a case. The breasts when thus increased in size are more pendulous in appearance, and, what is more important, are much softer to the feel, than in cases of pregnancy. The increase in size is evidently due to deposit of a soft cushiony elastic material—fat—in and around the glands, and beneath the skin covering them. At the same time there is an absence of certain important changes in the skin, which are visible to the eye: these latter will be presently described. Enlargement of the breasts from pregnancy is recognisable by the touch, the sensation conveyed differing essentially from that due to fatty deposit in the gland; hard, knotty, tolerably well-defined masses—the lobules of the gland—are felt beneath the skin, these being arranged symmetrically around the common centre. The normal anatomy of the mammary gland must be known, or the observer will fail to appreciate to the full the characters now alluded to. In the simply fatty breast the enlargement present is chiefly constituted by a soft, uniform structure: the lobules of the gland may still be recognisable to the touch, but they are small in proportion to what is observed under other circumstances. An increase in the size of the breasts due to fat is likely to be observed in women at the climacteric period; and the facts that the menses are irregular, or absent, that the breasts are painful, while at the same time the abdomen is noticed to be larger, often induce women at this age to believe themselves pregnant. In such cases, too, it has been occasionally noticed that a serous fluid, not unlike milk, exudes from the nipples, and this appears to confirm the erroneous conclusion formed. It is hardly necessary to observe, that the breasts may be enlarged from chronic diseases of various kinds. In most of such cases, however, the enlargement has this distinguishing peculiarity, that it is limited to one breast, or to one side of the breast; in pregnancy the enlargement is uniform, and affects the gland

on the two sides equally. There is a rare form of disease, a kind of hypertrophy of the breasts, in which may be exhibited a more general and universal enlargement, but for many reasons it would be difficult to confound such cases with cases of pregnancy.

Enlargement of the breasts is sometimes a consequence simply of marriage; the glands become tumefied, painful, and more knotty than usual, and, in point of fact, the changes observed somewhat resemble those present in cases of pregnancy. The swelling is, however, temporary; after a few days it subsides, or, if it continue, no further changes are observed in the skin around the nipples, such as will be presently described as associated with pregnancy. A slight enlargement of the breasts is frequently present at the catamenial periods under ordinary circumstances; here the breasts return to their normal state during the catamenial interval. Temporary suppression of the menses is very generally associated with mammary enlargement.

Any condition resulting in distension of the uterus may occasion swelling of the breasts. Retention of the menses in cases of imperforate hymen is perhaps the most common of the cases coming under this category. The presence of ovarian tumours is frequently associated with enlargement of the breasts.

From what has now been said it will have been rendered evident, that the enlargement of the breast must be a peculiar kind of enlargement to give good occasion for the suspicion that pregnancy is present. The mere increase in size is of itself worth nothing in the matter of the diagnosis.

It does not always happen that when the patient is pregnant the breasts become enlarged. Thus, neither positively nor negatively does the sign in question give reliable information.

2. CHANGES VISIBLE TO THE EYE.

The great value of certain appearances in the skin surrounding the nipple as diagnostic of pregnancy, has been pointed out particularly by Dr. Montgomery, and more recently in the work of Dr. Earle. The changes produced in the nipple itself, in the skin immediately surrounding the nipple—the areola—and in the skin covering the remainder of the breast, must be severally considered.

Changes in the Nipple.—One principal alteration in the nipple visible to the eye, and consequent on pregnancy, is a slight increase in its size. It is more turgid and vascular, it is rather darker

than previously,* and towards the end of pregnancy the colour may become very dark, approximating to that of the skin around, presently to be alluded to. The apex of the nipple during the latter half of pregnancy is usually more or less scaly in appearance, due to the fact that a slight exudation has been going on, on the drying up of which little scales are left behind. Dr. Earle correctly observes, that the condition of the nipple itself is of little practical importance from a diagnostic point of view. But the most important diagnostic fact connected with the nipple is the possibility or not of squeezing from it a secretion. The precise value of this latter sign must now be particularly examined.

In order to ascertain in a given case whether a secretion be actually present or not, it is necessary to manipulate in a peculiar manner, too familiar to need description. The secretion is thus pressed outwards from the recesses of the gland, and exudes at the orifices of the ducts on the nipple. It must be remembered that human milk is a serous-looking fluid, almost transparent, and unlike the milk of cows. The presence of a secretion of milk in the breasts is a valuable sign, but by no means a certain sign, of pregnancy. Cases are on record in which girls have had such a secretion quite unconnected with pregnancy. Montgomery refers to three very well-marked cases of this kind: in one case, that of Baudelocque's, it was observed in a little girl aged eight years only. Again, women advanced in life sometimes exhibit this secreting power in the breasts; and this is not astonishing, when we find it indisputably proved that, under certain circumstances, the breasts of individuals of the male sex have been known to secrete a fluid to all intents and purposes identical with milk. These exceptional cases will be found recorded at length in the treatise of the author just referred to, and in Dr. Tanner's more recent work. Next it is to be observed, that women who have once borne one or more children not unfrequently continue to secrete milk for a very considerable time—for many years in some instances; and hence if a woman has had children, presence of milk in the breasts has very little value as a sign of pregnancy, very little, at least, compared with the other case, that of a woman who has never been pregnant before. 'Altogether,' says Dr. Montgomery, 'it is a sign which we cannot expect to make generally available as a guide in forming an opinion in a doubtful case.' Dr. Tanner has found the presence of milk indicative of pregnancy as early as the ninth

* ' . . . crassescit papilla, inflata videtur, color ejusdem fit obscurior, simili colore distinguitur discus ambiens.' Roederer, *Elem. Art. Obst.*

or tenth week, and he considers the presence of a secretion containing, on microscopic examination, the characteristic milk globules, with large oil particles and colostrum granules, as an early and reliable sign of pregnancy in a woman who has never given birth to a child.* And this opinion is doubtless a correct one, applied, as Dr. Tanner observes, to the diagnosis of cases of amenorrhœa, such as ordinarily come before us, and when there is no reason for supposing that the patient has been stimulating the mammary glands by the application of galactagogues, or allowing the nipples to be sucked by an infant. And whether we accept the evidence drawn from presence of milk as positive or not, the sign has this great value, that it is one easily observed, and that we may be thus led to search for, and detect, the presence of other more reliable and more decisive signs of pregnancy.

Changes in the Areola.—The changes observable in the areola are of very great importance. William Hunter, and more recently Montgomery and Earle, have attached a great degree of value to these changes as a sign of pregnancy. The changes in question will be now described. Around the nipple there is a narrow band of integument of a delicate texture, resembling pretty nearly the surface of the nipple itself. This circular band is of variable width in different cases; it is the areola. When pregnancy occurs, the areola becomes larger, altered in colour, presents on its surface certain eminences not before observable—not observable to such a degree at all events—and it becomes altered in some other particulars. Each and all of these changes require a separate consideration, but it may be premised that the presence of one alone of them is generally valueless for purposes of diagnosis.

One change observed, and to which Montgomery has specially directed attention, 'is a soft moist state of the integument, which appears a little raised above the surrounding skin, and in a state of turgescence.†' This change is observable as early as the end of the second month. It is of more diagnostic value in the case of primiparæ.

The deepening of the *colour* of the areola is the one which has been the best known. The degree of the change in the colour varies in different subjects. In light-haired women it may be slight, but in dark-haired women it is often very striking and intense, the areola in such cases presenting an almost complete blackness at the end of pregnancy. The period of pregnancy at

* *Op. cit.* p. 63.

† *Op. cit.* p. 105.

which the change in the colour is evident is not by any means the same in all women. During the first two months little alteration of colour is evident, but in the third month the tint becomes perceptibly darker in most cases. In the fifth month it is ordinarily decided, and from this time to the end of pregnancy the tint deepens. In Montgomery's work will be found some beautiful and accurate pictorial representations of the areola at the third, fifth, seventh, and ninth months respectively; the areola of an albino is also depicted. A dark-coloured areola is by itself, and in a woman who has had children, more especially if she be of dark complexion, not of great value as diagnostic of pregnancy. In conjunction with other changes it has great value.

The *size* of the areola is next to be considered. This also varies in different persons. The areola may be only a quarter of an inch broad, or it may have a diameter of as much as three inches. When it is very dark it is usually very large also. The point to be observed is *increase* in the width of the areola: '... discus ambiens, qui in latitudinem majorem expanditur' (Roederer); and this is, other signs agreeing therewith, indicative of pregnancy. As the pregnancy advances, the width of the areola increases. The areola may in rare cases be found at the end of pregnancy not more than a quarter of an inch broad; absence of a wide areola is therefore not a positive sign that pregnancy is absent.

The Areolar Glands or Follicles.—The most important, the most characteristic, and the most universal of the changes observable in the areola, and due to pregnancy, consists in the formation of little glandular eminences projecting from the surface of the integument covering the areola, not unlike the head of a pin in size and shape, well described by Roederer in his celebrated work in the following terms:—'discus ambiens . . . parvisque eminentiis, quasi totidem papillulis, tegitur.' These little eminences have been termed miniature nipples; Morgagni detected lactiferous tubes going to each of the little tubercles in question, and the milky fluid, it has been stated, has been observed to issue from them under favourable circumstances. The little eminences now under consideration begin to show themselves as early as the end of the second month of pregnancy; they subsequently increase in number, and also in size. They are more thickly placed close to the nipple; are usually from twelve to twenty in number; the elevations to which they give rise are perceptible to the eye and to the touch.

In the work before referred to, Dr. Earle, who has investigated

anew the 'follicular' signs of pregnancy, expresses conclusions somewhat different from those ordinarily received. He finds that there are several varieties of follicles observed, and he classes them under five heads. 1. Follicles which may be termed vesicular, consisting of little eminences arranged in clusters of three, four, or five, over the areola, but placed concentrically as regards the nipple. 2. The pustuloid variety, arranged singly. These two varieties are distinguished by presence of a sebaceous secretion within them, which may be pressed out. They are characteristic of pregnancy. Next, he describes a series of small follicles, only evident when the skin of the areola is put on the stretch, and which are closely grouped together immediately round the base of the nipple: they resemble the ultimate saccules of a vesicular gland. They also are characteristic of pregnancy. Lastly, two other varieties are described, the papular, and the mastoid, which do not secrete sebaceous matter, and which are not characteristic of pregnancy. Dr. Earle believes that the characteristic follicles are frequently absent in primiparæ, and that in any case there is no progressive growth of them during pregnancy, such as has been described. Further, he disputes strongly the statement originally made by Morgagni, that the areolar follicles have a communication with the lacteal ducts. The latter point is important, for, as he observes, if such communication be held to be present, those who think lightly of the milk test will also think lightly of the 'sebaceous' test; they would argue that if the breast may be stimulated to secrete milk without conception, so these cases might, through the supposed communication, become filled with lacteal secretion. In multiparæ, the presence of the sebaceous-containing follicle is a very important sign during the early months.

The points raised by Dr. Earle are very important. My own observations, while they have led me to distrust the estimate of the value of the follicular signs as given by previous authors, have not been sufficiently exact or numerous to enable me to criticise Dr. Earle's views. One conclusion which I had come to before reading this author's work was, that the little eminences due to presence of areolar glands often persist and do not disappear after pregnancy and suckling have come to an end. In one case I distinctly noticed areolar glands well marked, when the lady had not had a child or given suck for five years. The mere presence of these areolar glands cannot therefore, I believe, be relied on as a sign of pregnancy in a woman who has had children. As a sign

recognisable at a very early period, as a sign which we find most constantly of all present, the presence and *growth under observation* of the areolar glands or follicles is, however, of the greatest practical assistance in the diagnosis of pregnancy.

Secondary Areola.—This term is applied to a change in the areola of a peculiar character. At the fifth month, not earlier, according to Dr. Montgomery's experience, are observed 'numerous 'round spots or small mottled patches of a whitish colour scattered 'over the outer part of the areola, and for about an inch or more 'all round presenting an appearance as if the colour had been 'discharged by a shower of drops falling on the part.'* As pregnancy advances these appearances are intensified. Dr. Montgomery's opinion was that these appearances are quite distinctive, 'exclusively resulting from pregnancy.'

To sum up these remarks on the characteristic changes in the areola—we have increase in size, change of colour, development of areolar glands, presence of secondary areola, moist puffy state of the integument. If the case before us be one of pregnancy, we shall find these changes present in association with each other; some will be found more marked than others in different cases.

Other Changes in the Breasts visible to the Eye.—In cases of pregnancy the veins running beneath the skin become more visible than usual. This enlargement of the veins is symmetrical; it is accompanied always by hardening of the breasts, by increase in their size. Dr. Earle states that venous branches traversing the areola are, in his opinion, characteristic of pregnancy.

Another change to which reference must be made is presence of little cracks in the integument, giving rise to formation of narrow sinuous white lines radiating irregularly from the centre of the breasts, and produced by the tension and stretching of the skin. The presence of these lines is a sign of pregnancy, if the patient have never conceived or given suck, and if the enlargement of the breasts before us is evidently not due to fat; but under other circumstances it is valueless and may mislead.

General Value of Changes in the Breasts as diagnostic of Pregnancy.—Of the value of the individual changes in the breasts as signs of pregnancy, which have been now considered *seriatim*, but little remains to be added. It is to be remarked that these signs, taken as a whole, should, in reference to the diagnosis of the case before us, be considered side by side with other signs of preg-

* *Op. cit.* p. 108.

nancy before we proceed to pronounce a positive opinion. In cases of pregnancy the symptoms march onwards with a certain amount of regularity, and if one sign be present another should be present also. Thus, if in the case before us we find what we consider to be a perfect instance of the pregnancy areola of about the fifth month of gestation, there should be at this time a tumour discoverable in the abdomen; failing to find a tumour, we should at once conclude further investigation of the case to be necessary. The mistakes which have been committed in the diagnosis of pregnancy will on enquiry be generally found to have resulted from the observer attaching an undue importance to some one sign on which he has been accustomed to rely, and from his having omitted to ascertain the presence or absence of other, perhaps more important, signs of pregnancy. (See pp. 377 *et seq.*)

SUPPLEMENTARY CHAPTER.

THE DIAGNOSIS AND CAUSES OF STERILITY.

General Remarks—Signs of Virility in the Man.

CAUSES OF STERILITY IN THE WOMAN.—1. Mechanical Causes; Condition of Hymen, of Ostium Vaginæ, of Vagina, Presence of Tumours, &c., interfering with Sexual Intercourse; Spasm of Vagina; Conditions of the Uterus, imperfect Development, Polypi, Flexions, Narrowness of the Uterine Canal, Chronic Inflammation; Diseases of the Ovaries; Altered Conditions of the Fallopian Tubes; Ill-timed Intercourse; Masturbation, Follicular Disease of Vulva; Disease of Rectum—2. Abnormal Condition of the Secretions; Leucorrhœa, &c. 3. Constitutional or General Causes; Sexual Frigidity; Over-feeding and Luxurious Habits; Obesity; Syphilis.

THERE is hardly any pathological condition of the generative organs of the female which may not, directly or indirectly, have to do with sterility; and it is very certain that no individual will be able to form a sufficient diagnosis of the causes of sterility in a given case who is not familiar with the whole range of knowledge in this department of medicine, and who is not further intimately conversant with the anatomy and physiology of the generative organs. It would appear that in reference to the diagnosis of the causes of sterility, practitioners have not uncommonly failed in detecting the cause, simply because they have not taken a sufficiently wide and comprehensive view of the subject; and it has not unfrequently happened, in consequence, that in cases of sterility where the cause was very readily removable, the cause has been overlooked because it has not been sought for. Individuals, for instance, have been long and fruitlessly subjected to courses of hygienic and general treatment for the cure of sterility in cases where a very simple exploration of the generative organs would have shown the futility of such treatment. But while the causes of sterility are such as in many cases we can detect, explain, and remove, there are not a few cases in which our attempts are baffled, and for the solution of which we must be content to await the further advance of knowledge.

It need not be stated how important it is in many cases that

are likely to come before us, we should be able to resolve the question—What is the cause of the sterility? The reproach of childlessness is one which is often a very grievous one to bear, and one which the patient would often give her all to remove. There is then a double inducement to the careful study of the subject—its inherent difficulty and the importance of overcoming that difficulty.

The only practical method of treating the subject of the diagnosis of the causes of sterility is to state definitely and systematically what are the possible causes. The following list of these possible causes has been made out chiefly on the basis of facts actually observed and recorded.

The question which naturally first occurs to us in ascertaining the cause of the sterility is—To whom is the infertility to be attributed, the woman or the man? There seems to be little difference of opinion amongst the best authorities as to the fact that the fault is rarely on the side of the man, and generally a very few enquiries will be sufficient to exclude this element from the consideration.

If the male organs be intact, and questions with reference to power of erection and penetration be answered satisfactorily, the question, What is the cause of the sterility? may generally be dismissed as far as the husband is concerned. The cases are few in which, if the testes be apparently sound, the secretion itself is deficient in fertilising power. The popular notion on this subject is a very incorrect one; and this subject of supposed male infertility is consequently a very great source of profit to those pests of society, the ‘manly vigour’ class of impostors and quacks. If the husband be in good health, and have lived temperately, the power of impregnating often exists up to a very advanced period of life; but in those who have, from an early period of their lives, been addicted to excesses, the sexual power may fail prematurely. In cases of the latter kind, enquiries will readily show the nature of the deficiency.*

* For full information on the subject here referred to, Mr. Curling's admirable work (*A Practical Treatise on Diseases of the Testis*, 2nd ed. 1856) may be consulted. Mr. Curling has recently (June 23, 1863) laid before the Royal Medical and Chirurgical Society the details of certain cases, from which he shows that in the man an inaptitude to impregnate may coexist with the capacity for sexual intercourse—that in fact the man is subject to *sterility* independently of virility. The questions raised for consideration in this paper are most important in reference to the subject now under discussion. This paper will probably appear in the forthcoming volume of the Society's *Transactions*.

CAUSES OF STERILITY IN WOMEN.

The first point to which our enquiries tend is as to the patency of the canals through which the spermatic fluid and the ovule must pass in order to come into contact. The vagina, the uterus, the Fallopian tubes must offer no impediment, or sterility is inevitable.

We may consider the causes of sterility in the woman under the following heads:—1. Mechanical causes; Abnormal condition of some part of the generative passages, such as to interfere with the proper transit of the spermatic fluid or of the ovules; 2. Abnormal conditions of the secretions of the generative passages; 3. Constitutional and general causes.

1. MECHANICAL CAUSES OF STERILITY.

a. Abnormal Conditions of the Hymen.—This membrane is sometimes dense and firm, and effectual intercourse is prevented. Cases in which this condition is met with usually come under our notice owing to a complaint on the part of the husband that intercourse cannot be effected satisfactorily. In some such cases we find on enquiry that the menstrual flow proceeds regularly and without much apparent disturbance; the hymen is not quite complete, but is perforated at one or more points sufficiently to allow of the passing of the menstrual fluid, but not sufficiently so to allow of perfect intercourse. In such cases, sterility generally, but *not always*, exists; for it has been found in cases very well authenticated, some of which may indeed be found in Mauriceau,* not to cite authorities much more recent, that a nearly perfect hymen does not necessarily prevent fecundation. In some of these cases the hymen has been found so dense and firm at the final termination of pregnancy as actually to impede parturition. The menstrual phenomena may then be present, and yet the hymen may be imperforate in a certain degree. In another class of cases the woman has never menstruated, and the hymen is found complete, absolutely preventing the escape of the menstrual secretion. In some rare cases the hymen is imperforate, but is at the same time yielding, so much so, indeed, as to allow of ordinary intercourse. A case in which the hymen is absolutely imperforate generally arrests attention from the fact that the menstrual flow has never been observed, and, in the case of married women, the aid of the

* *Maladies des Femmes.*

practitioner is more frequently called in for this reason than because of the sterility with which it is also associated. The physical examination will always and readily demonstrate the nature of the impediment to fecundation which exists in both of these important classes of cases.

b. Narrowness or partial Closure of Ostium Vaginæ or Vaginal Canal.—The vagina is in rare instances *partially closed* at different parts of its course by bands, constituting partial strictures of the canal, and rendering intercourse difficult or incomplete, and so leading to sterility. Such a condition of the canal may be congenital, or it may be brought about in consequence of previous difficult parturition, laceration and cicatrisation of the torn part leading to contraction, and to partial, or even complete, closure of the canal. The strictures thus resulting may be low down, at the position of the hymen, or higher up near the os uteri.

c. Or the vagina may be altogether absent, or constituted by a small cul-de-sac, barely admitting the point of the finger. This condition may be congenital or may be produced by difficult labour, laceration of the walls of the canal having been followed by cicatrisation and contraction of the same. In the congenital variety, menstruation is absent because of the usually associated absence or defective development of the uterus; in the acquired variety, menstruation may or may not be absent according as the canal is completely closed or not. The canal may be large enough to allow of menstruation occurring, but too small to admit of sexual intercourse, and consequently of impregnation.

d. Tumours, &c., interfering with Sexual Intercourse.—The aperture of the ostium vaginæ being natural in point of size, sterility may exist because of the presence of a tumour or growth filling up the canal, or so situated as to interfere with efficient sexual intercourse. The presence of an *enlarged clitoris* has been known to have this result.

The canal of the vagina may be occupied by a growth interfering in like manner with intercourse. *Hypertrophy of the cervix uteri* forming a conical tumour sometimes of considerable size, *polypus of the uterus* hanging down into the vagina, or *prolapsus* of the uterus itself, may in particular cases give rise to sterility.

Spasmodic Affection of the Ostium Vaginæ—Vaginal Spasm—Vaginismus.—This condition has until recently had hardly a sufficiently prominent place assigned to it in the list of causes of sterility. Its relation to sterility is a very important one. Very recently it has excited the attention of more than one observer. The

affection has been described in some of the older established text-books. Recently, Debout and Michon, in the 'Bull. de Thérapeut.' ii. 1861, and Dr. Marion Sims, in vol. iii. of the 'Obstetrical Transactions,' have described cases in which a very marked hyperæsthesia of the vulvar aperture was present, associated with violent spasmodic contraction of the muscular structures surrounding the ostium vaginæ. Dr. Sims designates it by the term *Vaginismus*. The spasmodic contraction is induced or aggravated by attempts at sexual intercourse. Owing to the extreme sensibility of the parts in the first, and to the mechanical closure of the canal in the second, place, sexual intercourse is almost or quite impossible, and in several of the cases recorded there was consequently sterility.

The affection is probably mostly dependent on a hyper-sensitive condition of the nervous system in general, associated or not with local changes in other parts of the generative organs.

f. Condition of the Uterus.—*Absence or imperfect development of the uterus* is a cause of sterility the existence of which is only to be substantiated by an internal examination (see 'Examination of the Vagina'). There is a class of cases which come under the present category, and which are very interesting from a practical point of view—viz. those in which the cervix uteri, or rather the vaginal portion of the cervix, is small and somewhat infantile in character, the opening being also small. In many such cases infertility has been observed, and has been remedied by simply incising the os uteri and thus enlarging the aperture.

Infertility is by no means a necessary consequence of absence of the catamenia. It has been repeatedly proved that women may conceive who have never menstruated; and if it became a question whether marriage was allowable in a particular case, the simple absence of this function could not be considered as *definitively* against the propriety of such a procedure, unless that absence were accompanied by other and more essential sexual deficiencies.

The other conditions on the part of the uterus which may cause sterility will next be enumerated. First are to be considered those cases in which the cavity of the uterus is occupied by tumours—*polypi* of the uterus. They produce sterility in two ways: first by closing the canal of the uterus and preventing the contact of the spermatic fluid with the ovule; and secondly by determining the speedy ejection of the young ovum in cases where impregnation has actually occurred—in other words, by producing abortion at a very early period.

The presence of a polypus, even of a somewhat considerable size,

in the uterus, does not necessarily produce sterility. *Fibroid tumours of the uterus* are more effectual, probably, in the production of abortion than in the actual prevention of impregnation; but in some cases, as when the tumour situated between the uterine mucous membrane, and encroaching gradually on the uterine cavity, produces a narrowing or partial occlusion of the cavity at that situation, impregnation is prevented. Out of 69 cases of fibroid tumour recorded by Scanzoni, 35 had never conceived. Mayer has recorded 272 cases* of sterility: fibroid tumour of the uterus is set down as the cause of the same in 6 cases.

Chronic hypertrophy of the uterus, variously termed, also, chronic inflammation of the uterus, 'chronic infarctus,' is a condition unfavourable to fecundity. Scanzoni attributes the sterility of prostitutes to the existence of this alteration. This condition is generally accompanied with congestion and undue fulness of the neighbouring blood-vessels, alike unfavourable to healthy ovulation and to the normal development of the ovum within the uterus. That form of atresia produced by *flexion of the uterus* is a more common cause of sterility. Recorded observations lead us to infer, that this condition, flexion of the uterus, has a very important influence on fecundity, and my own experience is quite in concurrence with the view in question. Mayer found that 97 out of 272 cases of sterility presented flexion of the uterus, the fundus being tilted forwards in 60 cases, and backwards in 37. In 29 of the 97 cases there were complications, but in the remaining 68 the flexion was the only discoverable lesion. Whether the flexion produces sterility because it is effectual in preventing the passage of the seminal fluid, or because it brings about a very early separation of the fecundated ovum from the interior of the uterus, is not easy to determine. It is probably operative in both ways, in different cases.

The *uterine cervical canal* may be *comparatively very narrow*, the seat of the constriction being either at the upper extremity of the cervical canal, where it joins the body of the uterus, or lower down at the os uteri. And there may be *congenital closure* of the canal at the positions indicated. In cases in which there is actual closure of the canal, the os uteri being imperforate, menstruation is of course absent, and there may be menstrual retention. In cases where there is an opening, but a small one, the symptoms present are, speaking in general terms, those of

* See Virchow's *Archiv. für Patholog. Anat. und Phys.* Bd. x. p. 115.

dysmenorrhœa. The frequent association of sterility with dysmenorrhœa has always been the subject of remark.

The os uteri sometimes *becomes closed*, and sterility arises in consequence of the opposite sides of the canal becoming adherent after being torn. This is now and then a consequence of labour. In some cases it has been produced by the incautious or improper use of caustics.

Chronic inflammation and induration of the cervix of the uterus must be admitted as causes of sterility, although the frequency of the occurrence is very variously estimated by different observers. It has, in all probability, a greater influence in producing early abortion than in absolutely preventing impregnation.

In cases of *dysmenorrhœa* attended with expulsion of a membranous structure at each menstrual period, sterility is very generally observed. (See 'Disorders of Menstruation.')

g. Diseases of Ovaries.—*Cystic or other tumours of the ovary* prevent conception in many cases where menstruation is still present; but the existence of disease in one ovary, or removal of one ovary by operation, is not incompatible with the occurrence of pregnancy. Disease of the ovaries interferes with the fecundity of the woman in two ways;—directly, when the due secretion of ovules does not occur, and consequently either no ovules, or ovules in a morbid condition, are conveyed into the Fallopian tubes; in which case, however, menstruation would be expected to be absent, or at all events much disturbed; and indirectly, when the pressure of large tumours of the ovaries dislocates the uterus, and so disarranges the natural relations of this organ as to prevent both the passage of the ovule downwards, and the entrance of the spermatozoa into the uterus; or when the dislocation in question leads to the ejection of the latter from the uterus at a very early period of its development. Careful physical examination of the abdomen and of the pelvic cavity through the vagina is necessary to exclude ovarian disease from the consideration. In Mayer's 272 cases, ovarian tumours were present in 23 instances, and in 7 others ovarian tumour was present together with flexion or version of the uterus.

h. Altered conditions of the Fallopian tubes may prevent the passage of the ovule into the uterus. Peritonitis occasionally produces such *adhesions of the peritoneum covering the pelvic organs*, as to render it physically impossible for the ovaries to be grasped by the fimbriated extremities of the Fallopian tubes; thus the 'ovipont' cannot take place. *Atresia* or closure of the

canal is a condition sometimes met with; a condition of course fatal to impregnation of the ovules from the corresponding ovary. This condition may be combined with *dropsy of the Fallopian tubes*. Fibroid tumours of the uterus occasionally produce occlusion of the Fallopian tubes.

i. Here may be mentioned a possible cause of sterility, important to bear in mind—*ill-timed sexual intercourse*. It is the fact that women have a much greater aptitude to conceive immediately after the cessation of the menstrual flow, and this, therefore, is the most favourable time for sexual intercourse. It is related that Catherine de Medicis, wife of Henry. II. of France, became pregnant, after having been sterile for many years, apparently in consequence of following the advice of the physician Fernel, that sexual intercourse should only take place at the time in question.* It may turn out on enquiry, in particular cases of sterility, that it has been the custom to act in ignorance of this fact.

k. Under the next head may be included a number of causes occasionally, but by no means necessarily, leading to abortion. Thus, cases in which *masturbation* is practised, cases in which sexual intercourse is allowed to take place *too frequently*, cases in which the vulvar aperture is the seat of disease, as in *follicular inflammation of the vulva*, are those coming under this category most deserving of mention. *Diseases of the rectum* have been known to be associated with sterility.

2. ABNORMAL CONDITIONS OF THE SECRETIONS OF THE GENERATIVE PASSAGES.

Leucorrhœa.—Under ordinary healthy conditions, contact with the secretions of the mucous membrane lining the cervix, the uterus, and the vagina, does not at all impair the vigour and activity of the spermatozoa, in which the power of fertilisation resides; but these secretions may be so altered as to materially affect the activity of the spermatozoa, or so as to prevent mechanically, by their viscosity and tenacity (Dr. Tyler Smith), the passage of these bodies into the cavity of the uterus. The vaginal secretion is naturally acid, the cervical mucus is naturally alkaline; the healthy degree of acidity and alkalinity respectively is not hurtful to the spermatozoa; but it has been shown experimentally that if the vaginal mucus be too acid, or

* Montgomery, *op. cit.* p. 479.

† See Newport's experimental researches in *Philos. Trans.* 1851.

the cervical mucus be too alkaline, the spermatozoa subjected to the direct influence of these secretions quickly lose their power of motion. The relations of leucorrhœa to sterility have been fully discussed by some late observers, by Dr. Whitehead * and Dr. Tyler Smith† in particular; and each of these authors cites numerous cases of sterility associated with leucorrhœa, and in which there would seem to be little doubt that the influence of the leucorrhœa in producing the sterility was due in great part to the existence of this morbid condition of the secretions.

Coste‡ refers to an anecdote related by Dubois bearing on the questions now under consideration. A lady who had been for many years sterile informed Dubois that, having been in the habit of always using an injection of cold water after sexual intercourse, she one day accidentally used warm water instead. The result was that, having been sterile for many years, she at last conceived. Coste ascertained by experiment that the spermatozoa of mammalia are prejudicially affected by the application of quite cold water, whereas the admixture of warm water with the seminal fluid rather promoted than not their activity. These facts have their importance. It is quite possible that mere increase in the quantity of the secretion poured out by the cervix uteri may interfere with impregnation; and, as the presence of a certain amount of fluid on the surface of the mucous membrane would appear to be necessary for the proper conveyance of the fertilising fluid, it is not unreasonable to suppose that, where the mucous secretions of the generative passages are deficient in quantity, sterility may be observed.

3. CONSTITUTIONAL AND GENERAL CAUSES OF STERILITY.

One of the conditions here to be mentioned is, *sexual frigidity*—a want of inclination for sexual intercourse. There can be no question that the connection of this frigidity of temperament with sterility has been very much overrated. Women conceive and bear children who evince little or no sexual inclination. This condition is only *necessarily* associated with sterility when the generative apparatus is deficient and imperfectly developed; and no positive deduction can be drawn from such disinclination as to the incompetency of the woman to conceive.

* *On Abortion and Sterility.*

† *On Leucorrhœa.*

‡ *Histoire générale et particulière du Développement des Corps Organisés*, tom. i. p. 55.

When great *general debility* and *anæmia* are present, it is often the case that conception does not occur. The ovarian function suffers in common with the functions of the body generally, and the woman is not apt to the procreation of children. With anæmia disorder of the menstrual functions frequently, as is well known, coexists; the cases are few in which, menstruation being present, the sterility is dependent on the anæmia.

Another condition, the opposite of that present in anæmia, is more often the cause of sterility—that, namely, produced by *over-feeding* and *luxurious habits*. It is matter of common observation that the labouring classes, amongst whom destitution frequently prevails, are prolific in a degree not witnessed in the higher ranks of society. ‘It is,’ said the late Dr. Marshall Hall, ‘incontrovertibly proved by Mr. Sadler, in his work on the Law of Population, that the fecundity of the human race is diminished by the indolent and luxurious mode of life prevalent among the rich, whilst it is augmented by the labouring habits and spare diet of the poor . . . the proportionate infecundity of the two being, in general terms, as 6 to 1.’*

In women who are *unusually fat* an inaptitude to conceive is often observed.

Syphilis.—It is well known that the presence of syphilitic disease in either parent is frequently the cause of abortion or of premature birth. It may be questioned, however, whether the presence of syphilis is not occasionally the cause of sterility by destroying the product of conception at so early a period of the pregnancy that the very existence of pregnancy is for that reason unrecognised—the woman being really capable of conceiving, but the product of conception quickly perishing. The effect of syphilitic disease in disturbing the normal growth of the decidua at the commencement of pregnancy has hardly been, as yet, the subject of attention; but it is quite possible that disease of the decidua of a syphilitic character may come hereafter to be a recognised pathological condition. Facts which have come under my own observation have led me to suspect that syphilis may give rise to the effect here alluded to.

Conclusion.—In endeavouring to ascertain the cause of the sterility, it will be necessary for the observer carefully to examine into the history and antecedents of the patient, the manner in which menstruation is performed, and the general condition of the

* *On Constitutional Diseases of Females*, 1830, p. 7.

bodily health. Further, it will generally be necessary to examine the vagina and the external generative organs, and, if no cause for the sterility be there found, to examine the uterus. In carrying out the examination of the parts in question, the eye and the touch are both to be employed. In investigating the condition of the uterus, the speculum and the uterine sound, one or both, may be required.

PART II.

TREATMENT.

TREATMENT.

PRELIMINARY REMARKS.

Nature of the Changes observed in the Generative Organs as the Effect of Disease—
Use of the Word 'Inflammatory' as applied to designate Uterine Affections—Relation subsisting between Disorders of the Generative Organs and Constitutional Affections; Bearing of this on Treatment.

BEFORE proceeding to lay down rules for the treatment of the various affections of the generative organs in women, it will be necessary to consider the general principles which are to be recognised, and on which the treatment is to be conducted in particular cases; and the more so, as the opinions of authorities on the subject are, on many quite essential particulars, very conflicting.

A due estimation, not only of the nature of the pathological changes to which the generative organs in women are liable, but also of the precise relation which subsists between the diseases of these organs and the body at large, is essential in the formation of true principles of treatment. Thus, the diseases of the generative organs have to be considered, not only in their relation *inter se*, but in their relation to diseases and affections of a more general character. There are many cases in which the affection is evidently local, and in which the local disorder is necessarily the chief object of attention in matters relating to treatment; but there are also many respecting which it is not easy to determine whether the distress or inconvenience experienced by the patient results so much from the local disorder as from a more widely-spread constitutional derangement, which derangement may be, and frequently is, associated with local disorders and changes of various kinds.

Life in the woman is made up of three periods:—1. The period preceding that of sexual activity; 2. The period of sexual activity;

3. The period following the cessation of sexual activity. The peculiarities appertaining to these three several periods appear to be almost wholly dependent on, and subordinate to, the condition of the sexual organs at the several periods in question. The sexual organs consist essentially of the uterus and the ovaries, the due exercise of the sexual functions being dependent on the presence of these two organs in their integrity. In the exercise of the sexual functions the ovary is the more essential organ of the two: physiological reasoning conclusively indicates this. It may be that alterations in the ovaries, imperceptible perhaps to us as observers, influence the economy at large in a profound manner; but what we know at present rather justifies the belief that, in cases where the disorder is dependent on the sexual organs, the uterus is the particular organ most frequently at fault.

Before puberty has arrived the uterus is small and undeveloped, and has, functionally, no existence. And it is remarkable that, during this period, and whilst it remains in this dormant condition, it is not liable to disease. Disease of the organ only begins to show itself when it begins functionally to live. After the climacteric age has been passed, and uterine life has ceased, we find that the condition of the uterus is one very closely analogous with that which subsists before the arrival of puberty. The uterus becomes atrophied—physiologically dead—and the liability to disease for the most part ceases. Thus, during the first and the third stages of the woman's life, equally, the uterus is an organ lying inactive and almost powerless in the economy. But this is not all. The uterus not only enjoys a life of its own, so to speak, but it has a life or a succession of lives within this. If the woman becomes impregnated, the uterus, previously developed and matured, forthwith starts on a new road of development, becomes remarkably altered and changed, and, after the term of gestation has been completed, relapses into its previous condition; the uterus becomes disintegrated, and its substance almost completely removed. The building up of the gravid uterus is not more wonderful than its subsequent destruction. Successive pregnancies involve each the formation and destruction of the organ; for each pregnancy there is the life and the death of an entire uterus.

The uterus has thus a life of its own, distinct from, and in a certain degree disconnected with, that of other organs of the body. And from all these considerations it results that the diseases of the uterus have also peculiarities separating them from diseases of other organs.

In diseases of all organs of the body, wherever situate, we witness for the most part only alterations of natural processes; and the diseases observed in the uterus, in like manner, bear upon them the impress of their locality. It is not intended to imply that pathological processes and conditions, such as are met with in other organs of the body, may not be met with in the uterus. Such may unquestionably be the case: cancer, for instance, attacks the pylorus and the uterus, and the disease is in both positions integrally the same, although the tissues among which it makes its inroads are not of the same kind in the two cases. But it will be conceded, after a very slight amount of consideration of the subject, that the interpretation of the pathological and other changes in the uterus would be difficult by one unacquainted—if we could imagine such a thing possible—with the peculiarities of the structure of the uterus and with the nature of the functions which the uterus is called upon to perform in the economy. And it results from what has been now said that the peculiar structure, the peculiar physiological functions of the uterus, impress upon it pathological conditions, phases, and characteristics, with which we have nothing thoroughly identical, and sometimes not even analogous, in the pathological conditions of the other organs of the body.

The observations which apply to the uterus and its diseases apply also to the ovaries. Their diseases exhibit peculiarities dependent on the peculiar anatomical structure and the physiological functions of these organs. Although the manifestations of disease of the sexual system are, as already observed, chiefly exhibited in a tangible form in the uterus, it is impossible to disconnect these diseases with the ovaries. The uterus is dependent for its life—that is to say, for its physiological activity—on the ovaries. If the ovaries be removed, the physiological activity of the uterus is at an end. There is no more menstruation, no more capability of impregnation or of pregnancy; the diseases of menstruation and the diseases of pregnancy equally cease to manifest themselves. The ovaries are, as is well known, liable to certain peculiar diseases, and these diseases may proceed to such an extent as absolutely to abolish the function of the ovaries. It is probable that many uterine disorders are really results of influences having their starting-point in some unknown alterations in the ovaries.

In the uterine tissue—during sexual life—the chief phenomenon is the production and growth of fibres of a muscular nature. In the

ovaries, during the same period, is witnessed the growth of what may be termed cysts—cavities in which the ova are developed.

In both organs, the growth of the proper tissues of the part may become altered in such a manner that actual disease may be the result. The most common instances of this are met with—in the uterus, when the organ becomes enlarged and hypertrophied; in the ovaries, when the cysts there present enlarge, become dropsical, and the organ is forthwith the seat of what is known as ovarian dropsy.

In Dr. Henry Bennet's well-known work,* inflammation of the uterus has been made the groundwork and basis of the system of uterine pathology there laid down. Some remarks have been already made (see p. 303) on this subject in connection with the use of the speculum in the investigation of uterine disease; and it is there stated that many of the changes observed in the uterus are more conveniently than accurately designated by the term 'inflammation.' The term 'inflammation' has a very different signification with different authorities. Andral suggested that the word should be removed from medical nomenclature, on account of the vagueness of the expression and the arbitrariness of the interpretation given to it under different circumstances; and a more recent and equally celebrated pathologist, Dr. J. Hughes Bennett,† ably pursues the same argument. 'If the use of the word inflammation be retained,' says Dr. Bennett, 'it should be applied only to that perverted alteration of the vascular tissues which produces an exudation of the liquor sanguinis; it is this exudation only which can be held to unequivocally characterise an inflammation.'

Tested by this standard, the uterus is certainly very little liable to 'inflammation;' exudation, and transformations of such exudations, purulent and otherwise, similar to what may be witnessed in other organs of the body, being very rarely witnessed in the parenchyma of the uterus. The morbid processes with which we are familiar as affecting the tissues of the uterus, are for the most part alterations of growth, irregularities in growth, and, in fine, simply slight modifications of the processes which follow each other in due succession in the natural condition of things. The word 'inflammation,' used in Dr. J. Hughes Bennett's sense of the word, certainly fails in conveying an adequate idea of the modifications observed under such circumstances.

* *On Inflammation of the Uterus.*

† For the latest exposition of Dr. J. Hughes Bennett's views, see his Lectures now (1863) in course of publication in the *Lancet*.

If we apply the term 'inflammatory' to the great majority of cases of uterine disease which come before us, it must be in a sense different from that in which the word is used by Dr. J. Hughes Bennett, and we must be understood to mean by it simply a perversion of the nutritive action in the organ affected, and not necessarily a condition of which exudation of liquor sanguinis forms an essential part. There appears, however, to be no great objection for the present to designate the condition present in these uterine affections as one of 'chronic inflammation'—the physical changes most frequently resulting from this chronic inflammation of the uterine tissue being congestion, undue sensibility, and hypertrophy.

The word 'inflammation' is also used in describing the changes witnessed in the mucous membrane and secreting structures of the uterus. We speak of bronchitis, of coryza, as inflammations; and if the term be properly applied to these affections, it is difficult to withhold the use of the same term from cases in which there is analogous excessive secretion of the mucous surfaces of the uterus. Copious secretion from the glands of the cervix uteri, for instance, is evidence of excessive activity of these glands—which excessive activity may, under many circumstances, be as justly described as inflammatory, as the increased secretion of the nares in coryza (see p. 302).

The term 'endometritis' has found favour with those who are disposed to consider that the affections of the mucous membrane of the body of the uterus are more important than those of other portions of the organ. It does not appear that the part of the organ in question is more liable to disease than any other, or that its disorders have any special significance. The most important affection coming under this category is that which results in the production of membranous dysmenorrhœa, as it is termed—the membrane discharged consisting apparently of the normal menstrual deciduous membrane abnormally thickened. This form of 'chronic endometritis' is, however, not very common.

The presence of *ulceration* of the os uteri, its nature, frequency, and importance, have been already fully discussed (see p. 295).

The *relation subsisting between constitutional disorder and diseases of the generative organs* is one of the utmost importance in reference to treatment; and it is unquestionably the fact that, in all cases, even where the local ailment requires special attention, a due regard to the general condition of the individual, and the application of therapeutic measures tending to restore the general health, are of the greatest service. We must endeavour in practice

to avoid the two extremes, and to neglect neither the condition of the general health nor the local affection. In some cases it is necessary that we should avoid attaching undue importance to any uterine ailment which may be present, particularly in individuals of hysterical habit, for, in such cases, the long-continued direction of the thoughts of the patient to the treatment of the local suffering appears to have the effect of intensifying the mischief. The difficulty in deciding how far the symptoms present are connected with local disease, or with the constitutional disorder, is frequently by no means inconsiderable; and frequent allusion has been made to it in the first part of the present work. The rules laid down in the following pages for the treatment of the several affections of the generative organs to which women are liable, are based on the principle that, if the best results are to be obtained, the local and the constitutional treatment must go hand in hand, and that the one must be subservient to the other, according to the peculiarities of the case, the urgency of particular symptoms, or other circumstances. In the consideration of the treatment proper in a particular case, the great importance of carrying the diagnosis as far as possible begins to make itself known. Diagnosis implies not simply a knowledge of the actual disease of the patient, but a discernment and appreciation of the nature of the perturbations of the vital processes which have led to the production of that disease. And, as a natural consequence, the treatment of disease becomes simplified in direct proportion to the extent of our knowledge as to its true nature.

CHAPTER I.

TREATMENT OF AMENORRHŒA.

Treatment of AMENORRHŒA from Delay of Puberty or Defective Development—

Cases in which there is Disorder of General Health associated with Amenorrhœa; Efficacy of General Treatment; Purgatives; Tonic, Ferruginous, &c., Food; Emmenagogues—Chlorosis and Amenorrhœa—Vicarious Menstruation.

SUPPRESSION OF MENSTRUATION.—Acute Form; Means to be adopted; various Emmenagogues; Mechanical Stimulation of the Uterus.

IN the present chapter the treatment adapted for the different cases in which amenorrhœa—absence of menstruation—is observed, will be described.

AMENORRHŒA FROM DELAY OF PUBERTY OR IMPERFECT DEVELOPMENT OF THE GENERATIVE ORGANS.

In cases where the arrival of puberty is simply delayed, if the patient be apparently strong and healthy, and if there be no appearance of menstrual molimina, no interference is necessary, at first at all events; and under these circumstances the result is usually satisfactory. The bodily rather than the mental faculties should be called into exercise, and every means taken to nourish and invigorate the system at large.

Absence of menstruation, together with absence of menstrual molimina, is hardly ever noticed after the age of nineteen or twenty, unless dependent on defective development of some part of the generative apparatus. In cases of defective development of the uterus or other of the generative organs, the patient may be in perfect health, and few of such cases can be greatly benefited by treatment. Those cases are the least encouraging in which the menstrual molimina are entirely absent. Where the absence of menstruation is connected with the presence of an under-sized uterus—i. e. where the uterus is imperfectly developed—Dr. Simpson recommends the continued wearing of a series of small galvanic pessaries of greater and greater length and thickness.

The irritation which the presence of the pessary produces, leads, it is stated, to the gradual development of the organ, and to the occurrence of menstruation. Cases in which the uterus is only a few lines shorter than the normal uterus are those only to which this method of treatment is stated to be applicable.*

It need hardly be stated that cases requiring this method of treatment are very exceptional indeed. The circumstances which might justify or necessitate its adoption would be those in which general invigorating measures have been fruitlessly tried for a considerable period (which period would vary according to the age of the patient), a very complete diagnosis made as to the state of the uterus, and the condition of the health of the individual being such as conclusively to show that the absence of menstruation is not dependent on any defect therein.

In some cases, where the general health appears to be good but no menstruation occurs, marriage is efficacious in inducing the appearance of the menstrual flow. Marriage should not, however, be recommended with the view of curing amenorrhœa, unless means have been taken to ascertain that the vagina and uterus are well, or reasonably well, developed.

AMENORRHEA ASSOCIATED WITH DISORDER OF THE GENERAL HEALTH.

A large number of cases come before us in which menstruation is imperfectly established, the discharge having appeared once or twice, slight in quantity, then ceasing; and the subjects of these symptoms are young women between the ages of twelve and eighteen. The individuals in question are found to be suffering from general indisposition of some sort, with which the amenorrhœa is associated. In a smaller number of instances there has been no attempt at menstruation, the patient having fallen into a state of ill-health before arriving at the menstrual age.

The relation, as cause and effect, subsisting between the disorder of the general health and the absence of menstruation, it is exceedingly important to recognise from a therapeutical point of view. 'The function of menstruation,' says Sir Charles M. Clarke, 'like the other functions of the body, is best performed when the system is in health. Now, health is not constituted by excess of fulness, or by the performance of violent actions, any more than by debility or enfeebled action; consequently, the exhibition of stimulants will not influence this secretion, unless attention be

* *Med. Times and Gazette*, June 15, 1861.

given to the restoration of the general health of the patient, even in cases of debility. Still less will such a mode of treatment be applicable to cases of interrupted menstruation occurring in plethoric habits, where the presence of the plethora itself is the cause of the interruption of the due performance of the natural secretions. Instead, then, of resorting to such measures—to the employment of the whip and of the spur in such cases (when, if they do anything, they do mischief)—let the morbid peculiarities of the constitution and the habits of life of the patient be taken into consideration; let the first be counteracted, the second be improved; let the sanguine have her excess of fulness diminished, let the debilitated have her powers augmented: in short, let the general health be amended, and the functions of health will be restored.*

By Sir Charles Locock, Dr. Marshall Hall, Dr. Rigby, and other equally eminent writers, the same doctrines have been inculcated, and the fruitlessness and absurdity of attempting, by so-called emmenagogues alone, to cure amenorrhœa coexisting with impaired health, have been more or less insisted on. It must be held to be decidedly improper, by local stimulation of the uterus, to attempt to produce a menstrual flow in a phthisical patient, for instance—certainly, to give a prominent place to such treatment; indeed, to practitioners imbued with the principles laid down by the eminent men above alluded to, such practice must appear something worse than absurd. It is the experience of all observant practitioners that those remedies act most efficiently as emmenagogues which produce a most decidedly beneficial effect on the defective condition of the general health. In treating such cases successfully, the production or the reestablishment of the menstrual secretion is the *final* result to be attained. Improvement in other respects must be effected first; the rest will follow as a matter of course, in the vast majority of cases.

The treatment, then, must be general—to find out what is the weak point, and to attack this. Either the patient has been living badly, taking too little food or food not sufficiently nutritious; or she has been leading a too sedentary or artificial life, deprived of pure air—in short, subjecting the body, at a very critical period, to many influences known to be incompatible with sound health. Medicines are quite subordinate in importance to the removal of these defective hygienic conditions.

* *Diseases of Females*, part ii. p. 38.

In the industrial classes of the community, neglect of hygienic laws is still productive of an immense amount of mischief in this respect. In the higher classes of society, it is too frequently the case that the solicitude of parents as to the mental culture of their children interferes materially with maintenance of physical health; and this is the chief reason why, in schools especially, there is too little time devoted to vigorous exercise and too much to sedentary intellectual work. A due provision in female educational establishments for taking strong vigorous exercise is still a desideratum. Horse exercise—not available, of course, for all, or in all cases—is most strongly to be recommended. It should be, but it is not, needless to add that the observance of early hours, administration of good and nourishing food, thorough ventilation, warm clothing, are all essentially necessary for the preservation of health during the two or three years preceding and following the date of commencement of menstruation. Observance of these rules—necessary to maintain individuals of good constitution in a state of health—is doubly necessary when there is a tendency to ‘weakness,’ or when disorder of any kind is actually present.

To return from this digression: in different cases very opposite methods of treatment may have to be insisted upon. We generally do find, however, as an effect of the bad state of health of the patient, partly also as a cause of the same, that there is great sluggishness and inactivity of the digestive organs, evinced by want of appetite and constipation; and hence, before it is possible to administer the amount of nutritious food the patient requires, it is frequently necessary to effect an improvement in the condition of the digestive organs.

‘It is advisable,’ says Sir Charles Locock, ‘to begin with an active purgative, which will often bring away a large collection of highly offensive motions with manifest relief to the patient. Small doses of blue pill may be afterwards occasionally repeated, and purgatives of a warm and stimulating character taken every morning, combined with a small quantity of some bitter extract or infusion, until the tongue appears cleaner, and the secretions from the bowels are more healthy.’* A draught containing either Rochelle salt or sulphate of potash, in combination with manna and rhubarb, I have found answer the purpose extremely well. Hygienic measures, exercise in the open air, sponging with cold water, friction of the skin night and morning with a rough

* *Cycl. Pract. Med.*, article *Amenorrhœa*.

towel; these are valuable accessory measures, the importance of which must be thoroughly explained to the patient, or they will not be regularly and efficiently carried out. The patient should be well clothed, and great care taken to keep the surface and extremities warm. 'It is,' says Sir James Clark, 'of the greatest consequence to invalids to maintain an active state of the circulation in the surface and extremities, which cannot be done in this country without the assistance of warm clothing.' These remarks apply with great force to the particular cases now under consideration. After a few days, tonics, as iron and quinine, may be given twice or thrice daily, a laxative every morning, and once or twice a week, according to circumstances, a small dose of blue pill with a little colocynth. The preparation of iron I have been in the habit of using, following Sir Charles Locock's practice in this particular, is the compound iron mixture of the Pharmacopœia.

I believe that the same good effects may be often obtained by administering one good purge at the first, and by subsequently giving a small dose (half an ounce) of the compound iron mixture thrice a day; care being taken to procure action of the bowels by giving every other morning confection of senna, castor oil, or an effervescing draught containing Rochelle salt. The small dose of iron appears to act quite as efficiently as the larger one. A preparation of iron less nauseous than the compound mixture has been recommended; namely, the syrup of the perphosphate of iron.

The dyspepsia often present in such cases is a most troublesome complication; and is best treated by administering *frequently and in very small quantities*, for some days together, food of the simplest character; avoiding all solid matters, and giving the patient only such food as it may be found by experiment she is able to digest freely and easily. Milk and water, weak beef-tea, yolk of egg beaten up uncooked, with milk, these are some of the most nutritious and easily digested foods.

Every means that can be devised to put the body in a sound state of health, will be beneficial as regards the end in view, the induction of menstruation. This point must ever be kept in view: amenorrhœa is only a symptom, not a disease.

After suitable means have been well tried, and the condition of the health improved, it is occasionally advisable to send the patient to the sea-side for a short time, or at all events to order a change of air. In some cases, when medicines of a ferruginous nature are not borne well, it is found advantageous to send the patient to live in the neighbourhood of a chalybeate spring. The small quantity

of iron which the water contains enables it to be taken, besides which, the change of air, scene, and occupation, has a most beneficial effect in improving the condition of the health. The waters of Schwalbach, Spa, Pyrmont, Driburg, Kissingen, are some of those most to be recommended for internal administration. The ferruginous waters are not however to be exclusively recommended in obstinate cases of ill-health associated with amenorrhœa, for in some cases the continual use of hot baths, such as those of Vichy, Ems, Carlsbad, Wiesbaden, or Baden-Baden, do great good by increasing the action of the skin and of the secreting apparatus generally. Above all, patience is necessary in the treatment; we must not expect the discharge to appear at once, and, in point of fact, the patient usually improves in all other respects before this evidence of the cure being completed is obtained.

Are emmenagogues, then, never to be given with the view of producing in a more direct and immediate manner the catamenial flow? But rarely. They are more especially applicable in the cases to be presently considered, where there is suppression, and where the menses have been present. The actual and immediate production of the menstrual flow in the class of cases now concerned is, however, advantageous in one way, that it sets at rest any doubt we may have as to the possibility of menstruation. And the more direct action may be sought to be induced in cases where general measures have been fairly tried and found unavailing; also in cases where the general health being good, and no attempt at menstruation observed, it is thought expedient to try this method of treatment as a kind of *dernier ressort*.

The best method to follow in endeavouring to induce directly this action of the uterus will be considered presently.

Chlorosis and Amenorrhœa.—What has been said respecting the management of cases of amenorrhœa, with disorder of health of whatever kind, is here applicable. These cases are now and then obstinate, and in a chronic case time and patience are very requisite. The bowels are generally very costive. Daily, a laxative draught should be given, the medicine selected being that which acts most easily—rhubarb, Rochelle salt with manna; these are some of the simplest we can select, and by no means the worst; and once a week or so a stronger draught, containing decoction of aloes with some aperient salt, may be required. Ferruginous preparations are essential; small doses are generally the best; and they are most efficacious when given as constituents of mineral waters. It is often a matter of experiment as to which form of

iron suits the best. The subjects of chlorosis are often so debilitated, that great care is at first necessary; and they are unable to take much food, or to bear much active exercise. Hence a vigorous treatment is not at first advisable. We must adapt the food and the regimen to the strength of the patient.

Amenorrhœa with Vicarious Menstruation.—The object of the treatment in these cases is first to improve the state of the health, which is generally bad, by tonics, &c., and secondly, to endeavour to induce congestion of the uterus and pelvic viscera at the menstrual periods. The patient should be treated, in fact, as if she were the subject of menstrual suppression (see 'Suppression'). Lastly, it will be necessary to alleviate any discomfort, pain, or inconvenience which may be consequent on the presence of the unusual discharge.

SUPPRESSION OF MENSTRUATION.

In a case of *acute* suppression of the menses, if seen in time, the proper treatment would be to place the patient immediately in a warm hip-bath, and to administer a stimulant, such as hot gin-and-water, and, especially if a sudden chill be the cause, to endeavour to excite the action of the skin by placing the patient in bed, and giving a dose (ten to fifteen grains) of Dover's powder. A sinapism should be applied to the hypogastric region. In strong or plethoric habits, cupping to the loins, or venesection, would be proper; leeches to the vulva might be used in most cases. It is probable that the most powerful means of inducing the return of the discharge under such circumstances would be either the application of electro-galvanism, or the administration of an enema containing aloes by the rectum. It generally happens, however, that when the patient comes under observation, the period for such treatment is gone by. We must in such cases wait until a day or two before the next period, and then apply suitable remedies. The remedies consist in keeping the patient quiet, maintaining a comfortable temperature of the body generally, placing her in a hip-bath, with mustard, night and morning, for three or four times if necessary, administering two or three times a day a warm stimulating draught, and if the case be obstinate, and other circumstances do not forbid, in using galvanism, or some one of the emmenagogues to be presently spoken of. Opium is a most valuable remedy in cases where mental emotions have had to do with the suppression. We now and then meet with cases of sudden suppression in young women of weakly habit, who have

been subjected to disturbing emotional influences at the menstrual period. In these cases, opium and a supply of good nourishment should be both freely given, and rest and quietude enjoined.

Many different medicines or remedial measures are set down as efficacious in inducing the flow of the menses, and which are given or directed to be given with a view of exciting, and in a direct manner, the menstrual secretion. It is to be remarked of these, that they are exceedingly uncertain in their effects and action in different individuals, and very frequently have no effect whatever. Moreover, it does not follow because a discharge has been procured that the difficulty is forthwith at an end; the simple production of a sanguineous discharge is not the only object we have in view. It is not so difficult a thing to produce a discharge, as it is to reproduce what may be considered to constitute the discharge of menstruation. Most of the so-called emmenagogues act, it must be concluded, by producing congestion and fulness of the vessels of the uterus and surrounding parts. The following are some most recommended: aloes in form of enema, dissolved in soap and water (Aran); the old pill of aloes and myrrh of the Pharmacopœia, which should be given in doses of five grains or upwards, every night and morning, for a few days prior to the expected period; liquor ammoniæ, dissolved in milk (a teaspoonful of the ammonia in a pint of milk injected into the vagina); savin, the oil of which may be given dissolved in mucilage in doses of three or four drops (Sir Charles Clarke, Dr. Tilt, and others); iodine (Dr. Rigby, who preferred it in the form of iodide of iron); Sir Charles Locock states that he has found a combination of myrrh, aloes, sulphate of iron, and the essential oil of savin, frequently of great utility. Ergot of rye, in doses of ten grains three times a day, is also highly spoken of by the same authority.

Mustard is said (Ashwell, Rigby) to have an emmenagogue effect, given in doses of ten or twelve grains. Dr. Ashwell considered mercury the best remedy of the kind, and it has certainly appeared to me to do good in several cases in which I have employed it. On two successive nights, at the time of the next expected period, a dose may be given, each consisting of five grains of calomel and six grains of aloes, followed by a seidlitz powder in the morning. The dose must be smaller than this, if the patient be very feeble; indeed, presence of feebleness is contra-indicative of necessity for this kind of treatment at all.

Dr. Simpson recommends the application of direct stimulants to the interior of the uterus—nitrate of silver, cantharides, or iodine

—by means of a *porte caustique*, the application to be made at the time when menstruation should occur, and repeated at monthly intervals. Dr. Simpson also speaks highly of a kind of dry cupping of the interior of the uterus, and of the employment of galvanic intra-uterine pessaries of peculiar construction, in the form of amenorrhœa now under consideration. With respect to the efficacy of galvanism, Dr. Simpson considers its continued application by the use of pessaries more serviceable than the occasional application by the ordinary methods. Dr. Althaus states, however, that he has in many cases found great benefit from Faradisation assiduously and properly applied; and, in the extremely few cases in which such direct local treatment by galvanism or by other measures of an analogous kind can be considered either necessary, expedient, or even justifiable, the latter method is to be recommended as the preferable one. Pulvermacher's apparatus is a most simple and ingenious method of continuously applying this therapeutic agent, and is peculiarly suited for chronic cases of amenorrhœa after the general health has been reestablished by suitable means.

Cases of *chronic suppression* require to be treated on the foregoing principle—first, to correct the ill health generally present, then to encourage month by month, by gentle measures, the return of menstruation.

MECHANICAL CAUSES OF AMENORRHOEA.

The treatment of this important class of cases, including imperforate hymen, occlusion of the os uteri, &c., will be discussed farther on.

CHAPTER II.

TREATMENT OF CASES OF PROFUSE MENSTRUATION; AND
HÆMORRHAGES.

Profuse Menstruation; Importance of removing the Cause; General Treatment; Internal Remedies; Treatment in Cases of Flooding—Hæmorrhages dependent on Organic Disease, Tumours, &c. of the Uterus—Hæmorrhages connected with Retention of Portion of Ovum.

PROFUSE MENSTRUATION.

THE primary object to be kept in view in the treatment of cases of profuse menstruation is to remove the condition of things giving rise to the excessive loss. If the blood be impoverished, the patient must be strengthened, the general health improved by careful hygienic measures, by good food, pure air, exercise, &c. Any special predisposing cause, the detection of which may require very careful scrutiny of the habits and previous history of the patient (see p. 51), must be removed. If, for instance, the patient be living in a malarious neighbourhood, the residence must be changed. In cases where there is great torpidity of the system, congestion of the abdominal viscera, a loaded state of the bowels, and unhealthy state of the secretions generally, what may be termed a derivative plan of treatment, consisting in administration of brisk purgatives and such medicines as are known to excite action of the liver and chylopoietic organs generally, is the most effective. In cases of great debility, iron is necessary. A mixture containing very small doses of sulphate of magnesia, with a little dilute sulphuric acid and syrup, is exceedingly useful during the days of the profuse catamenial flow. We frequently meet with the two conditions, great debility, from long-continued but perhaps slight loss, together with a sluggish, overloaded, congested condition of the digestive organs and apparatus generally. These cases require careful management. Tonics and purgatives must be given together. For such, a colocynth and rhubarb pill twice a week, with iron and sulphate of magnesia in small doses.

two or three times a day, may be recommended. To promote the action of the skin, to insure regular action of the bowels, and to improve in every possible way the general health of the patient, is to do pretty nearly all that can be done in the general treatment of ordinary cases of profuse menstruation not dependent on some physical derangement of the uterus. It is satisfactory to know, moreover, that this comparatively simple treatment is a very successful one in ordinary cases.

We now and then meet with instances in which the disorder is a very obstinate one, more especially in women who have resided in tropical climates, such as India. The uterus and pelvic organs generally are found in such cases in a state of chronic congestion, there is profuse menstruation, together with leucorrhœa. The only means of successfully dealing with these cases is to carefully supervise the performance of the functions generally, and especially those of menstruation, fecundation, &c., and to remove, by appropriate treatment, the diseased condition of the uterus, which is the cause of the symptoms. (See 'Treatment of Chronic Inflammation of the Uterus.')

Where the circumstances of the patient admit of it, and the case is an obstinate one, great advantage will be derived from residence at a watering-place, where, for a variety of reasons, hygienic measures are better enforced, and more easily carried out, than at home. The remedies considered necessary, aperients, tonics, &c., are more efficacious also when administered in the form of mineral water. In selecting the spa, regard must therefore be had to the peculiar condition of the patient, and the cause of the menorrhagia. (See 'Treatment of Chronic Inflammation of the Uterus.')

The external employment of baths is of the greatest service. The cold hip-bath is frequently the means of keeping patients in health who would otherwise suffer constantly from profuse menstruation; its good effects are especially noticeable at the climacteric period. The daily use of the sponge-bath is strongly to be recommended, the skin being rubbed all over by means of a rough towel for some minutes afterwards. The Turkish bath will probably come to be largely used in the treatment of certain cases of menorrhagia in which there is defective activity of the skin, and in which sufficient bodily exercise cannot, for some reason or other, be taken.

In all cases where the uterus and pelvic organs are in a congested condition, the use of the vaginal douche is of most valuable

assistance in the treatment. The best means of applying this remedy will be described in the next chapter (see p. 464).

It is of extreme importance to regulate the conduct of the patient at the menstrual periods. For two or more days previous to the expected period, and during the time at which the discharge is going on, the patient must be directed to remain as quiet as possible, and chiefly in the recumbent posture. The clothing must be light, the room should be cool. The bowels must be kept regularly open, and stimulant articles of food, as well as excessive eating and drinking, must be avoided. Sexual intercourse is to be prohibited. By adopting these simple precautions, much will be effected in diminishing the amount of the discharge.

But there are cases in which something more than this requires to be done. It may be that the loss of blood has been, or continues to be, so profuse that it is necessary to arrest it in a more summary manner. Sometimes the patient is found to have been the subject of profuse menstruation, of what has been termed the *passive* form, for many months, and has become so reduced in consequence, that a further loss of blood is likely to be attended with grave inconvenience. For the treatment of this form of profuse menstruation, the general preventive means hitherto spoken of are applicable, and their application is most important; but something more is needed. In extreme cases it has been, and may be, found necessary to arrest the further flow of blood in a mechanical manner, i. e. by plugging the vagina. This will be best effected by inserting, by means of a speculum or otherwise, a sponge or a piece of lint dipped in infusion of matico or tincture of sesquichloride of iron in the vaginal canal, quite close to the cervix uteri, and retaining it in its place by means of an india-rubber air pessary, the latter being distended by inflation so as to completely close up the vaginal canal. Dr. Bennet suggests that the os uteri itself should be plugged in order to restrain hæmorrhage, and he states that he has practised this operation, which he prefers to that of plugging the vagina, with success. The older plan is, however, all things considered, the most universally applicable. The patient must be directed to remain in the recumbent posture; cloths dipped in cold water should be laid over the pelvic region and removed and reapplied from time to time; or what is perhaps better, a cold wet napkin may be flapped upon the abdomen, so as to produce a sudden shock. Injection of cold or iced water into the rectum is also a most valuable means of arresting the flow of blood in bad cases of this kind. The object is to

produce contraction of the uterus, for that organ is relaxed, congested, and in a condition very much resembling that which is present after labour.

The internal remedies to be made use of are, firstly, those which are known to induce contraction of the uterus; secondly, those which are known to have the power of arresting hæmorrhage—styptics, as they are termed. Ergot of rye and ipecacuanha have been found serviceable in cases of *post-partum* hæmorrhage; and they are applicable in the treatment of the severer forms of profuse menstruation also. I have myself had great success with the ergot, when all other remedies had markedly failed. A decoction of the fresh powder should be taken three times a day. The styptics most recommended are—a combination of matico and gallic acid, by Dr. West; a combination of matico and diacetate of lead, by the late Dr. Rigby. Tannin and sesquichloride of iron have been spoken highly of also. Opium is a remedy which has been highly extolled in cases of profuse menstruation, as also in hæmorrhages generally, but it does not appear to be adapted for chronic cases. Of late, attention has been directed to digitalis administered internally as of peculiar efficacy in the treatment of profuse menstruation, but the results obtained in cases where I have tried it have not been altogether encouraging. The tincture of cannabis indica is recommended by Dr. McClintock as a good hæmostatic. In passive menorrhagia, Beau recommends rue and savin, in doses of rather less than one grain each.

In severe cases of profuse hæmorrhage, while measures are being taken to arrest the discharge of blood and to prevent further hæmorrhage, it is necessary to support the patient by administering stimulants and nourishments internally. The requirements in individual cases vary according to the urgency of the symptoms. Brandy and beef-tea must be given frequently, but in small quantities at a time. It is possible to conceive a case—indeed, such are on record—in which transfusion may be necessary, and where the patient's life may be prolonged, if not saved, by a timely recourse to this procedure.

It does not very often happen that a patient perishes from hæmorrhage due to simple profuse menstruation, but there are many cases where life, if not abruptly cut short, is materially abbreviated by the weakness and prostration consequent on a long continuance of the evil. In obstinate cases of menorrhagia, where all other means fail, the injection of tincture of iodine into the uterus has been practised. In one instance where I saw it so

used, but little effect was produced. Dilatation of the os uteri, and scraping of the interior of the uterus, following this up or not by injection of iodine, is a plan of treatment which has been recently practised and recommended by Dr. Routh and Dr. Tilt in cases of chronic menorrhagia; the object being to remove certain fungosities of the mucous membrane which, it is stated, have been found to be present. There are, however, few cases of menorrhagia, so far as my own experience has shown, which are not amenable to treatment of a more simple kind: it may be questioned whether these 'fungosities' are really of pathological nature.

UNUSUAL DISCHARGE OF BLOOD DEPENDENT ON ORGANIC OR OTHER DISEASE OF THE UTERUS, &c.

Here there are usually present both excessive menstruation and interperiodic discharges of blood. If the patient has ceased to menstruate, this is, of course, not the case.

The treatment is palliative or curative, one or both, according to circumstances. The case may or may not admit of absolute cure. When not curable, much may often be done to diminish the loss of blood at the menstrual periods by giving the patient directions as to her conduct during the time in question. Thus, in cases of cancer, cases of fibrous tumour, cases of flexion, &c., where it may not be proper, for a variety of reasons, to resort to more radical measures, rest, the horizontal position, careful diet, and the systematic application of this system of treatment at and during each successive menstrual period, will do much to lessen the amount of the loss of blood. It is in these cases, also, that we occasionally find it necessary to apply measures for at once arresting the discharge of blood, and which have been already pointed out. The discharge of blood may, under such circumstances, be such as to amount to a regular hæmorrhage, and must be treated as such; but, whatever be its cause, the amount of the discharge may be always very considerably reduced by the preventive and palliative measures which have been already alluded to.

With reference to the *curative* treatment of these cases of unusual discharge of blood from the uterus, and which are connected with the presence of organic or other disease, it is next to impossible to lay down precise rules. The proper radical treatment of the various pathological conditions of the uterus, &c., will be discussed hereafter. At present, some general observations

will be made in reference to the treatment of these cases, so far as the hæmorrhage is concerned.

The loss of blood produced by the presence of organic or other disease of the uterus is often such as to necessitate the absolute removal of the cause of the discharge in order to save the patient's life. This is more particularly the case where polypus of the uterus, a disease which is generally removable without any great amount of difficulty, is present. Here it is to be remarked, that a minute mucous polypus growing just within the os uteri has been known to give rise to severe hæmorrhage; a pedunculated growth of this kind may occasion more hæmorrhage than a polypus of considerable size; and hence operations are demanded in order to restrain the hæmorrhage, with varying degrees of urgency in different cases. Respecting the treatment of diseases of the uterus, giving rise to hæmorrhages and to profuse menstruation, one or both, it must be stated that the hæmorrhage is not generally the only reason for deciding on operative or other measures for their removal.

Then, again, in many cases, our decision as to treatment will be affected by this consideration. The patient may be fast approaching the end of menstrual life, and it may be expected that the hæmorrhage, with the profuse menstruation, will disappear at the end of a short period. Such a view of the case may present itself to us where there are fibrous tumours in the uterine wall, projecting, perhaps, into the cavity of the uterus, and giving rise to the symptoms now under discussion. In many such cases, symptoms which, during menstrual life, are of great severity, grow less, and the patient, while retaining her disease, finds the inconveniences for the most part vanish with the arrival of the last menstruation.

In cases where the unusual loss of blood follows the occurrence of abortion, or in cases where there is reason to believe that abortion has, or may have, recently occurred, the first thing to be done is to ascertain whether any portion of the ovum, or of its membranes, remain in the uterus, and if anything be there found to remove it. Experience has shown that the retention within the uterus of a very small portion of membrane is sufficient to give rise to considerable and continued loss of blood. Where the os uteri is so closed that the finger cannot be easily introduced, it must be slowly and carefully dilated by the finger, or by a sponge tent, or, what would be still better, the caoutchouc bladder filled with water and distended slowly and gradually. Dr. Barnes has

recently introduced a most useful and manageable instrument constructed on this principle. The consideration of the treatment appropriate in such cases, however, falls more properly within the province of midwifery. It is sufficient here to insist on the necessity for completely emptying the uterus to check the hæmorrhage proceeding from this cause.

CHAPTER III.

TREATMENT OF LEUCORRHOEA ; INCLUDING VARIOUS DISCHARGES
FROM THE GENERATIVE ORGANS OF NON-SANGUINEOUS
CHARACTER.

General Treatment—Removal of the Cause—Resort to Watering-places—Baths—
Injections ; special Form of Apparatus recommended—Medicated Injections—
Internal Remedies ; Iron ; Tonics, &c. ; Lavements of Aloes.

THE question as to the best method of treatment to be pursued for the removal or amelioration of discharges of the kind now under consideration is a very wide one. It has been shown that these discharges arise from, or are produced by, an immense variety of causes, and the treatment must differ correspondingly, according to the nature of the case. Perfectly satisfactory results can only be hoped for from a mode of treatment based on a complete knowledge of the case actually before us, and on a just appreciation of the relations which, as causes and effects, subsist between the condition of the patient and the symptoms present. To endeavour to seize upon the true *indication* for treatment, this should always be our object ; and, to be able to do this, the diagnosis must be a complete one.

The treatment of leucorrhœa (excluding from the consideration discharges of a specific nature) is of two kinds, *general* and *local*. There are few cases of leucorrhœa which may not be benefited by the exclusive adoption of either one of these methods of treatment perseveringly followed up ; but, in most cases, a combination of the two is the more suitable, and yields most satisfactory results. Even when there is a tangible alteration of the uterus (presence of tumours, dislocation of uterus, &c.), giving rise to leucorrhœa, general treatment is often of very great service ; although, in order to cure the disease giving rise to the discharge, local measures may be indispensable. Correspondingly, local treatment may be found of great service in cases where radical cure can only be expected to follow adoption of judicious general treatment. And

this accounts for the apparent paradox, that, on the one hand, the upholders of a general treatment, and, on the other, those who attach most importance to local treatment, both find their own particular theories justified by the results of their practice.

To remove the *cause* of the leucorrhœa is the first indication. The treatment must have regard primarily to that. In a case of phthisis, for instance, in which leucorrhœa is present, the treatment must have regard to the phthisis in the first place, although it may be necessary also to employ local or other measures calculated to arrest or diminish the leucorrhœal discharge. Where the leucorrhœa is due to, or associated with, an anæmic condition, the removal of that condition should be the chief object of our endeavours. If there be any reason to suppose that the patient's residence is unfavourable hygienically, this must be remedied. If the leucorrhœa be associated with exalted activity of the sexual organs, as is sometimes the case when intercourse is indulged in inordinately, the indication is obvious. There are few cases of leucorrhœa in which the uterus is altogether sound. The organ is usually congested, large, its tissues relaxed, and the activity of the glandular apparatus lining the cervix unnaturally increased; under such circumstances, the primary object is to remove the condition of the uterus on which the leucorrhœa depends. (See 'Treatment of Chronic Inflammation of the Uterus.') The next element in the treatment is of the utmost importance: in all cases it is absolutely essential to supervise the due action of the digestive organs, and of the great cutaneous surface. Plans of treatment, in other particulars the most judiciously contrived, may prove useless, unless these primary points be attended to. The quantity, quality, and mode of taking food, must be carefully adjusted to the requirements of the case. The skin must be kept warm; and its due action insured by employment of friction, baths, and exercise. In patients who have been long the subjects of leucorrhœal discharge, the importance of carefully regulating the 'mode of life' cannot be over-estimated; and it is the more necessary to insist on this, as not unfrequently the practitioner on the one hand, and the patient on the other, pay far too little attention to these essentials; the result of this neglect being a temporary, and not a radical, cure of the affection.

There are some cases of long-standing profuse leucorrhœa, in which, as Sir Charles Locock has remarked, bad results may ensue from a too sudden stoppage of the discharge; due caution should be exercised, therefore, in the application of remedies in these cases.

Resort to Watering-Places.—Several watering-places have obtained repute from the efficacy of the mineral waters there to be obtained in removing leucorrhœa, especially that of a chronic form. It is unquestionable that very good effects are frequently obtained under the use of the waters in question; the effect produced results in many such cases from the change of air, the perfect rest and relief from ordinary cares and anxieties, the regular exercise, simple diet, and the change in the mode of life generally, all of which play, unquestionably, a most important part in bringing about the cure, as much as from the specific curative power of the water itself. The improvement in the general health is usually rapidly followed by a cessation or diminution of the leucorrhœa. In a certain number of cases we find great difficulty in persuading patients to follow up systematically the course of treatment enjoined while they are living in their own houses, surrounded by home associations and in a manner tied down to home habits; and for this reason it is sometimes necessary to send patients to watering-places in order that they may be induced to give themselves a fair chance of recovery. In the choice of a watering-place, regard must be had to the special condition and requirements of the patient. ('See Treatment of Chronic Inflammation of the Uterus.')

Baths.—These are very powerful therapeutic agents in the treatment of cases of leucorrhœa dependent on constitutional causes. The use of the bath has the effect of determining the blood to the skin, and thus relieves the congestion of the internal organs usually present in these cases. The condition of the patient must be regarded in reference to the choice of the form of bath. The most simple form of bath is the 'sponge-bath,' the patient being directed to sponge the whole of the body night and morning with water, at first tepid, and then quite cold; the skin being rubbed dry by means of a coarse towel, and the friction continued for some minutes. Then comes the hip-bath. This may be at first used tepid, afterwards cold. The hip-bath may be either of pure, salt, or medicated water. If the hip-bath be medicated with the view of the fluid acting upon the interior of the vagina, means must be taken to insure the passage of the fluid into this canal. The hip-bath is, however, very serviceable when plain water is used. After the bath, the skin should be rubbed as in the case of the sponge-bath. With due care, the hip-bath or sponge-bath, alone or together, may be used in all cases, however debilitated the patient may be. It is

necessary that a 'réaction,' as it is termed, take place after the bath, or it does harm, and the patient suffers from headache or other inconvenience for some hours after. For those who are able to bear it, the 'shower-bath' or the cold plunge bath are to be recommended. There are some cases which are most benefited by the warm bath, in which the patient is wholly immersed. Thus, in cases of leucorrhœa, which, from the severity of the symptoms, and suddenness of their invasion, may be termed *acute*, the warm bath is of the greatest utility.

Injections.—Judiciously used, injections are of the greatest value in the treatment of leucorrhœa. In many cases they have a curative effect; in all cases they are of some service; and in certain cases they are almost indispensable. But it is not less true that leucorrhœa may be often cured without recourse to injections at all.

The first point to be attended to in the employment of injections is the form of instrument to be used. It is in most cases mere trifling to employ a small syringe. What is necessary is an apparatus by means of which a considerable quantity of fluid may be thrown up and obtain access to the cervix uteri. A large-sized gum-elastic vaginal pipe rather longer than the speculum, open above by five or six tolerably large perforations, should be first introduced into the vagina so as to reach the os uteri. Having been introduced, the lower end of the pipe is then to be connected with the pipe of the injection-apparatus. This is made in a variety of forms. The most convenient of the apparatus hitherto employed is Kennedy's syringe. I have, however, found it exceedingly difficult to induce patients, especially those who are weakly and debilitated, to use any instrument requiring the application of manual force, however slight, for a sufficient length of time to do good; moreover, the quantity of fluid capable of being used at each operation is too restricted. One of the most important—as I believe *the* most important—therapeutic action of injections, is due to the application of cold to the inferior segment of the uterus, by which the contractile power of the blood-vessels is increased, and the chronic congestion or inflammation of the part diminished. In order that this particular action may be best insured, it is evident that a somewhat continuous irrigation of the cervix uteri is necessary, and this is not to be had by the ordinary apparatus—unless, indeed, by taking unusual pains or trouble in the matter. In order to supply the defect in question, I have had constructed a very simple and effective instrument,

by which the patient can have the benefit of irrigation of the vaginal part of the uterus of some minutes' duration, and without the necessity for manual effort, such as pumping, of any kind. An india-rubber bag or reservoir, capable of holding nearly a gallon of water, has attached to it a long flexible pipe, which ends in the vaginal exit tube. The bag filled with water is hung up above the patient, or placed on an article of furniture a little above the patient's body. The water descends by the action of gravitation alone; the rapidity of the flow is regulated by simply turning a stop-cock, placed just outside the vaginal tube, and the water flows until the reservoir is empty. The douche apparatus in question has the advantage of great portability and simplicity.* The douche should, it is hardly necessary to observe, be used with caution in cases where pregnancy is suspected to be present.

The next question is as to the nature of the fluid to be injected. Very much benefit will be derived from the use of plain cold water, if only a sufficient quantity be used at each injection. And for a variety of reasons, not the least of which is that it is always accessible, and no preparation or forethought is required, it is advantageous to use water alone. The cold water has a powerful effect in diminishing that congestion of the uterus and generative organs generally, which is usually present in the class of cases now contemplated. And it is, as I have just remarked, very questionable whether the effect of injections as ordinarily administered, in diminishing the discharge, be not for the most part due to this circumstance. Medicated injections do not, as a rule, actually come into contact with the surface (the interior of the cervix), which, in obstinate chronic cases, is the chief source of the discharge, and chiefly act on that small part of the cervical cavity which is exposed at the os uteri.

A variety of substances are used mixed with water, and constituting *medicated* injections. Most of these are considered beneficial from the astringent properties they possess. Alum, sulphate of zinc, nitrate of silver, decoction of oak bark, or tannin, are those most ordinarily used. A combination of tannin and alum (one or two drachms of tannin, with four drachms of alum, to two pints of water), recommended by more than one eminent authority, I have found very convenient. In all cases where medicated injections are used, it is desirable to employ, first, a simple

* The 'uterine douche,' constructed as described above, is to be procured of Messrs. Savory & Moore, New Bond Street.

injection of water, and to throw up the medicated liquid last. It is frequently found necessary, in obstinate cases, to change the injection from time to time. A particular remedy loses its effect after a few days' use. Astringent pessaries are sometimes used: the cacao butter, first used for this purpose by Dr. Tanner, appears to be the best substance in which to suspend the astringent application.

Blisters to the lumbar or sacral region are occasionally employed with advantage in obstinate cases of leucorrhœa. Counter-irritation of other kinds is serviceable under the same circumstances.

Injections of a medicated nature are sometimes necessary to obviate the offensiveness of the discharge which may be present, as in cases of cancer, cauliflower excrescence of the os uteri, &c. In such cases, antiseptic agents should be employed.

In cases where the discharge is acrid, and gives rise externally to irritation, it is necessary to order frequent ablutions with tepid water. A lotion containing a little carbonate or biborate of soda in solution is occasionally found serviceable in such cases.

Internal Remedies.—The object with which we give internal remedies in leucorrhœa, is usually that of remedying the constitutional derangement, whatever that may be, which is present. Purgatives may be necessary to produce regular action of the bowels, especially at first—and of these it is better to give small doses frequently, than large doses at longer intervals. Where the patient is chlorotic, aloes may be given; but in other cases it is, as Dr. Tyler Smith justly remarks, to be avoided. The debility with which in most cases leucorrhœa is associated, necessitates the employment of tonic remedies, of which the best is unquestionably iron. Dr. Tyler Smith especially recommends a peculiar salt of iron in these cases, the ammonia-iron-alum, in doses of three to six grains. Iron and alum combined have been employed (in other forms) by other practitioners with success. The preparation of iron I have most used has been the ordinary Pharmacopœia iron mixture: less probably depends on the particular form of the drug, than on the fitness of the case for iron in any shape. Certain therapeutic agents, such as cubebs, copaiba, &c., have been recommended in leucorrhœa, as having special effects in diminishing secretions from mucous surfaces. The ergot of rye has a better claim to our notice. I have used it in cases where the uterus was in a lax, congested condition, with the double effect of relieving the profuse menstruation and leucorrhœa sometimes associated. As a rule, we cannot expect much specific effect from internal

remedies in cases of leucorrhœa. Stimulants are very frequently necessary in the treatment of chronic cases of leucorrhœa attended with debility and prostration; they are to be looked upon in some instances as quite as essential as good food. The stimulant selected should be one which is found to suit the patient. The administration of stimulants is to be reprehended when the patient is plethoric, and when the viscera, pelvic and abdominal, are loaded with blood. The leucorrhœa endemic in fenny districts is treated successfully, according to Dr. Ashwell,* by bark, wine, gin, and tea and coffee.

Schönbein and Aran have recommended lavements containing aloes, suspended in mucilage or soap and water, in the treatment of chronic leucorrhœa. The lavements are to be used every day, or every other day, the rectum having been first washed out by water alone. The remedy in question must be used with caution. It may here be remarked, that aloes formed one of the principal ingredients in the celebrated pills of Stahl—in high repute many years ago for the cure of leucorrhœa.†

The treatment of leucorrhœa dependent on *local* disorders of various kinds, necessarily involves the removal of the special cause. It is to be observed, however, that in many cases where the cause of the leucorrhœa is a purely local one, a constitutional treatment is often highly beneficial.

* *Op. cit.* p. 181.

† See Dr. D. D. Davis's work, vol. i. p. 367.

CHAPTER IV.

GENERAL REMARKS ON THE TREATMENT OF PAIN REFERABLE TO THE INTERNAL GENERATIVE ORGANS.

Leeches and Local Depletion—Counter-irritation—Warmth—Anodynes—Antispasmodics—Other Remedies.

THE treatment of all the varieties of pain, whether attendant on menstruation or not, which have been described as referable to the generative organs, resolves itself, for the most part, into a question of diagnosis. What is the disease, or morbid condition giving rise to the pain? Knowing this, we are in a position to take steps for the removal of that disease. If this course be practicable, it is to be adopted. If it be impracticable, then the temporary palliation of the sufferings of the patient is the primary object. In every case—and this is sometimes lost sight of—it is essential to do what is possible for the temporary relief of the patient's sufferings, whether other and more radical measures be attempted or not. For the permanent relief of pains referable to the generative organs, a very extended course of treatment may be necessary, and, in point of fact, those cases are most difficult to cure, although they are not always the most serious, so far as danger to life is concerned, in which the pain experienced by the patient is the prominent feature. Where the pain is connected obviously with presence of a certain tangible and removable condition, the indication is obvious, but the difficult cases alluded to are those where this tangible element is wanting, or cannot be detected.

The remedial measures which are to be brought into operation in order to relieve the patient—radically or palliatively, as the case may be—from actual pain, will now be briefly considered, and the circumstances pointed out which render each of them specially applicable.

Leeches and Local Depletion of various kinds.—These are chiefly of service in cases where there are inflammatory symptoms

present, where the pain is more or less constant, and the patient is of full habit. In plethoric individuals, who suffer a good deal at the menstrual periods, leeches applied to the inside of the thighs once a month, half-way between the two periods, are often of decided benefit. In cases of acute inflammation of the uterus or its appendages, leeches to the hypogastric region may be required. In cases of pain dependent on long-standing congestion or chronic inflammation of the uterus, leeches to the cervix uteri are very serviceable. In cases where the ovaries are the seat of persistent pain, or tenderness and aching, leeches may be applied over the groin, or inside the thigh, with good effect. In cases of peri-uterine hæmatocele, the early application of leeches is to be recommended; but at a later period, except to check inflammatory action, which may have by that time arisen, they are inadmissible. There are many other circumstances under which local depletion for the relief of pain, and, indeed, with the view of curing the disease, is required, but it is impossible to enumerate them all. The objects endeavoured to be effected by local depletion are often as well attained by other measures, and this holds good particularly in regard to the relief of pain. Nevertheless, there are cases, some of which have been just mentioned, in which local depletion is of essential service, the relief of pain alone being considered.

Counter-irritation is a most important agent for the relief of the various pains now under consideration. It may be employed in a variety of ways, the plan selected being in accordance with the peculiar requirements of the case. A severe, sharp, acute pain is best met by application of a strong mustard poultice over the hypogastric region, or round the loins: this to be repeated at intervals. Turpentine dropped on a piece of flannel wrung out of boiling water, and applied to the skin, is another counter-irritant, even quicker in its action than the mustard poultice.

In cases where the pain is less acute, but more continuous, the counter-irritant selected must have a more continuous action. Ordinary blisters here serve the purpose very well. Tartar emetic suspended in oil, or in the form of an ointment, is a very convenient application; croton-oil liniment is equally applicable. Issues and setons are sometimes necessary in long-standing cases, and it is probable that they might be used with advantage to a greater extent than is at present the case.

Warmth.—Hot poultices of linseed-meal or bran are most valuable for the relief of the pain present in all kinds of inflam-

matory affections. They should be large, quite a third of an inch in thickness, and applied very hot. Several layers of flannel wrung out of boiling water, and rolled round the pelvis, offer a ready means of applying warmth. The warm hip-bath may be used for a like purpose. Bottles of hot water, or hot bricks wrapped up in flannel, are household remedies of every-day use. A warm decoction of poppies is often advantageously substituted for simply hot water for fomentations. The application of *cold* is not without its uses; but, as an anodyne, warmth is generally far more serviceable.

Anodynes.—The internal anodyne most ordinarily available is opium. The instances are innumerable in which we employ this most valuable drug, in one form or other, for the relief of pain. In cases of long-standing disease opium should be given cautiously, and for this reason, that otherwise there is a fear of making the medicine a necessity for the patient, the habit of taking opium being one easily acquired, and not readily broken off. The ‘*liquor opii sedativus*,’ of Battley, is one of the best forms in which to use the medicine in question. Opium is often combined advantageously with some of the æthereal preparations. A draught containing ‘*Battley*,’ and the compound spirit of sulphuric ether, is one of the best remedies for the relief of severe non-inflammatory pain referable to the uterus or ovaries, which can be employed.

In chloroform, we have an agent often of great service. Complete anæsthesia, by means of inhalation of chloroform, is not often required, except in cases where pain is very severe, or in order to facilitate operative manœuvres of various kinds. Taken internally, in the form of chloric ether, it is very useful as an adjunct to opium. The preparation known as ‘*chlorodyne*’ is one very largely used, combining, as it appears to do, the effects of the two therapeutic agents in question. The cases in which chloroform and its combinations are most valuable, are those in which there is an hysterical element present; the cases in which opium and its preparations are most imperatively required, are those in which there is organic disease, e.g. cancer of some one of the generative organs. In cancer of the uterus, the value of opium is quite inestimable. Belladonna, hyoscyamus, and conium are uncertain, and therefore often very unsatisfactory, remedies for the relief of pain, compared with those just mentioned. The Indian hemp is, however, better entitled to consideration, and in many

cases undoubtedly exercises a marked influence in allaying or preventing pain.

Camphor and Indian hemp combined, I have often found of great service. Indian hemp is a medicine which, so far as my experience goes, appears to affect different individuals very unequally.

Local application of anodynes is often attended with good effect. The endermic application of one of the salts of morphia is the most potent of these. Chloroform dropped on a piece of lint, and applied over the uterine or ovarian regions, is a remedy now and then very useful for the relief of temporary pains in these regions. Tincture of aconite may be rubbed in with a like object. Suppositories or enemas, which are in a manner local remedies, offer frequently a ready means of inducing cessation of pain in the pelvic organs. The solid opium may be employed for this purpose, or the tincture of opium suspended in water-gruel, or mixed with tincture of valerian or assafoetida: the latter combination is particularly useful in hysterical cases. Opiates and sedative remedies may be also used locally, by making them up into the form of pessaries, which are inserted in the vagina.

Other Remedies.—Camphor, alone or combined with opium, is of service when the pain present is of spasmodic character. The various remedies known as ‘antispasmodic’ fulfil a like indication, and, as already observed, the æthereal preparations are most important for the relief of certain kinds of pain. The pain associated with uterine contractions, such as is present in cases of difficult menstruation, is best influenced by the use of antispasmodics. The compound tincture of lavender, chloric ether, and the compound spirit of sulphuric ether, may be often very usefully associated (twenty drops of each for a dose), opium being added or not, as may be judged necessary: this forms a combination adapted for these, and, indeed, all cases where there is pain of a spasmodic character, whether at the menstrual period or at other times: this ‘red’ mixture is one which is very highly approved of by patients.

When the pain situated in the pelvis is of neuralgic character, the local application of anodynes to the surface, or their internal administration, may be required, but other remedies are more appropriate. Bark or quinine, arsenic, and the various medicines which go under the name of ‘nervine tonics,’ are of great value for the treatment of neuralgic pains seated in the ovaries, or in

the uterus (the 'irritable uterus' of Gooch). When the pain is periodic, bark is of sovereign efficacy, but it appears to do good in a multitude of cases where no such periodicity of the pain is observed. These cases of neuralgia are often exceedingly difficult to cure, and permanent benefit is only generally to be obtained by altering the whole mode of life and habits of the sufferer.

CHAPTER V.

TREATMENT OF DYSMENORRHOEA.

General Treatment; Rest, Opiates, Baths, &c.—Mechanical Treatment; by Incision and by Dilatation of the Canal of the Cervix Uteri—Imperforate Os Uteri, causing Menstrual or other Accumulation—Membranous Dysmenorrhœa.

As shown in the former part of this work, there are an infinite number of conditions capable of giving rise to pain during the process of menstruation—conditions requiring considerable care in their discrimination. The special treatment must be based on a sound and complete diagnosis of the nature of the case.

Whatever be the cause of the painful sensations experienced during menstruation, certain general rules are applicable as regards the treatment of the case, that is to say, so far as the palliative treatment is concerned. For the radical cure, other measures appropriate to the case will be required; but whether we adopt such radical measures or not, much good may be effected by attention to the general condition of the patient. Thus, in debilitated anæmic patients, the dysmenorrhœa present is often best treated by remedies which remove the anæmia, by a course of iron, and by attention to those general rules for the recovery of health, which are the foundation of the successful treatment of all diseases, whatever their nature.

The first element in the treatment is *rest* during, and for a short time previous to, the period of the flow. The patient must be directed to remain more or less constantly in the horizontal posture, during the period in question. Means are to be taken to insure the regular and proper action of the digestive organs. The food should be plain and simple; and aperients are to be administered, if necessary, to produce regular action of the bowels, and prevent congestion and fulness of the pelvic organs.

This congestion and fulness of the pelvic organs will be, especially in plethoric individuals, effectually dealt with by local depletion, leeches to the inside of the thighs or over the groins, in

some cases to the os uteri itself, or cupping to a slight amount over the sacrum, the blood being taken away either a day or two previous to that of the expected menstrual discharge, or on the first day of the discharge.

In choosing the remedies for the relief of the actual pain during menstruation, general principles are to be had regard to, and the observations already made on this subject are applicable. A few remarks on the remedies specially useful during the menstrual period are here required. When the pain is very severe, opiates are necessary; and these are most efficacious in the form of enemata. We are generally able, however, to do without opium; ether, of which the best and most efficacious preparation is unquestionably the compound spirit of sulphuric ether of the Pharmacopœia, combined or not with camphor, henbane, or sal-volatile, one or more of these are medicines very satisfactory in their effects, when given for the purpose of alleviating temporarily the pain present in menstrual retention, or for more simple cases. Cannabis indica is a valuable medicine in certain cases. A common domestic remedy—one the frequent use of which it is not, however, for obvious reasons, desirable to encourage—is gin-and-water. Chloroform inhaled, or given internally in the form of chloric ether, is often employed with advantage. Camphor and opium together are frequently serviceable.

When we have reason to believe that the sufferings of the patient are connected with the presence of a tendency to gout or rheumatism, it will be proper to give colchicum internally, which may be advantageously combined with a little blue pill, every night or every other night, and saline laxatives twice or thrice a day. In rheumatic cases, it is important to impress upon the patient the necessity for wearing flannel, and for avoidance of exposure to damp or cold. In cases where the system is atonic, and the circulation feeble, guaiacum was recommended and largely used by the late Dr. Rigby. The guaiacum may be given in a powder with magnesia, ten grains of each, every morning, or in the form of the ammoniated tincture of guaiacum. Guaiacum is a remedy very strongly recommended in dysmenorrhœa, attended with discharge of membranes or clots, by Dr. Dewees. A remedy very much used, and very highly recommended by Dr. Meigs, in the treatment of dysmenorrhœa, is the black hellebore, given 'for a long series of days, weeks, and even months.' The warm hip-bath, in which the patient is to remain for half an hour or so, is perhaps the most effectual of all remedies in affording relief

from the extreme pain sometimes present, while it is occasionally not less effectual in directly causing the discharge to appear. It is, in fact, both palliative and remedial in its effects.

There are many cases in which the pain, during menstruation, is referable to the *ovaries*, which organs are, under such circumstances, inflamed or congested, and where, in fact, there is evidence of the existence of ovarian folliculitis (see p. 126). In addition to the employment of the general remedies already directed, rest, evacuants, sedatives, &c., it is necessary in these cases to apply counter-irritation over the inguinal region; leeches may be required. Sedatives, opium, chloroform, antispasmodics, and remedies of analogous character are frequently called for.

If the nature of the pain be such as to indicate that menstruation is difficult, something more than general treatment may be required. The urgency and nature of the symptoms and other circumstances must determine whether, in a given case, it is necessary or advisable to adopt other than the general treatment now described. The presence of sterility associated with dysmenorrhœa, may be mentioned, among others, as a circumstance which might show the necessity for having recourse to other measures directed specifically to the removal of the cause. A careful examination of the cervical canal, by means of the sound, will generally give the observer a knowledge of the cause of the disorder, and what is the proper remedial treatment will in most cases forthwith suggest itself. In many cases, even where there is evident narrowing of the cervical canal, it is not judicious to attempt and at once to dilate the same by cutting or otherwise, as more good may result from the treatment of the condition leading to the narrowing in question. Further, until we have tried the effect of general treatment, such as that above recommended, it is impossible to say that anything beyond this will be required.

Mechanical Treatment of Dysmenorrhœa.—When the internal os uteri is so contracted that the ordinary uterine sound cannot be made to pass, and it is considered desirable to dilate the canal at this point, the course to be pursued is not the same in all cases. In some instances, gradual dilatation constitutes the best treatment; in others, the incision and dilatation combined must be had recourse to. And the course to be pursued will be also often determined by the special requirements of the case. In the former part of this work, an attempt has been made to show that, in a certain number of cases, the pains experienced in dysmenorrhœa arise from the internal os uteri being too small; and in a few of

such cases the patients can be cured only by enlarging the canal. Under such circumstances, therefore, a mechanical treatment may be required, and the question to be determined is, how it may be most easily and satisfactorily carried out. The simplest method of treatment, and one which very frequently suffices, is that of introducing the uterine sound, or metallic bougies specially constructed for the purpose, into the uterine cavity, once or twice, on the days before the expected period, the instrument first used being adapted to the size of the canal, and a larger one being subsequently employed. This plan of treatment is only practicable when the canal is large enough to admit a sound at all. In some cases this plan does not answer, or involves a too extended course of manipulations; in others, the canal is too narrow to admit an instrument, unless it be excessively small; in others, again, the cervix itself is small, and the canal *below* the internal os uteri is also contracted. The latter class of cases are those in which the uterus appears to be altogether small and infantile, and in which the sterility frequently associated with it appears to be due to the whole cervical canal being contracted in its dimensions. In these cases, a treatment consisting in enlargement of the whole cervical canal has been occasionally productive of good results, the patients having been relieved at once of the painful menstruation, and having subsequently also become fruitful. Enlargement of the whole cervical canal may be procured in several ways. Dr. Simpson first employed an instrument for the purpose of effecting the enlargement termed a 'metrotome,' and consisting of a sort of sound, from the side of which a knife is projected after it has been introduced into the cervical canal. This instrument has been since modified by various practitioners. Dr. Greenhalgh's instrument is so contrived that two incisions are simultaneously made from within opposite each other, and parallel in direction to the canal. This instrument enables the operator to incise the part of the cervical canal at the situation of the internal os uteri, better than the original one. Mr. Coghlan's probe-pointed metrotome* is an instrument well adapted for overcoming the difficulty of incising the higher part of the canal in certain cases. Whatever be the mode of making the incision, it is necessary to take means for preventing adhesion of the cut surfaces afterwards, and for this purpose the introduction of a series of solid metallic bougies is required, by which the patency

* *Med. Times and Gaz.* June 1, 1861.

of the canal is maintained. Mr. Coghlan employs little tubes of rolled lead for this purpose, which require to be introduced by a peculiar instrument he has designed.* On the whole, however, the solid or tubular silver bougie is the most manageable for maintaining the canal open. The silver bougie should be kept in the canal for the space of two or three days. The most satisfactory method of applying the incision treatment, where the cervix is generally too small, is, in my opinion, to incise first the lower part of the cervix, maintaining the canal open as above directed for a few days, and subsequently to operate on the part of the canal higher up, which would be at that time, and by reason of the former treatment, more accessible. By this means the difficulty of dilating the canal at the situation of the internal os uteri, may be in a certain degree removed.

The dangers of the incision treatment are probably, with exercise of due precautions, inconsiderable. Hæmorrhage may occur, but it is quite controllable by plugging. Inflammation of the uterus and pelvic abscess may occur, and are to be prevented by enforcing rest and great cleanliness after the operation.

Another method of enlarging the canal of the cervix is by forcibly dilating it. This can be done by introducing a series of bougies or tents, the size being gradually increased. Some are made of flexible metal and mounted on a handle for convenient use. The sponge tent is adapted for cases in which the os is, below, large enough to admit it, but where the whole cervix is small, the tents in question are more unmanageable. Many substances having the faculty of swelling on application of moisture have been made use of. The stem of the sea tangle (*Laminaria digitata*), which is, when dry, very hard, and which swells out when moistened, has recently been employed as a uterine tent, by Dr. Sloan of Ayr,† and will probably supersede all other uterine tents; it can be used in cases of extreme narrowness of the canal, and does not cause the offensive smell produced by sponge. If sponge tents are employed, they should not be allowed to remain in the cervix above three or four hours, copious injections of tepid water should be thrown up the vagina, and a second sponge tent should not be inserted until after the lapse of a little time. These precautions are necessary to avoid a danger connected with the use of sponge tents, viz. that of inducing pelvic inflammation and pyæmia. Means should be taken to prevent the

* *Med. Times and Gaz.* Feb. 22, 1862.

† See *Glasgow Medical Journal*, Oct. 1862.

tent escaping into the vagina, as it swells up on imbibition of moisture. This is best done by plugging the vagina with cotton wool, or by introducing an air pessary. Sponge tents have not been generally used for dilating the internal os uteri, in cases of difficult menstruation, or in cases of sterility due to a contracted condition of this part of the canal, from the difficulty of introducing them; they are more applicable in dilating the lower part of the cervical canal, preparatory to other operative measures higher up. Sponge tents are exceedingly useful in procuring dilatation of the cervical canal, and enabling us to explore more readily the state of the uterus itself, in cases of suspected uterine polypus; but here the canal is usually of a tolerably large size to begin with, and the introduction of the tent is more easy.

An instrument for dilating quickly and easily the uterine canal at the narrowest part, viz. the situation of the internal os, about one inch from the lower extremity of the cervical canal, has been greatly required, for it is at this point that the chief difficulty is encountered. Judging from the experiments I have made with it, Dr. Sloan's new tent will prove well adapted for this particular purpose.

IMPERFORATE CONDITION OF OS UTERI, CAUSING MENSTRUAL OR OTHER ACCUMULATION.

In some rare cases, the os uteri is imperforate, congenitally, and there is no escape for the menstrual fluid. And the os uteri may become occluded after labour, from effects of operations, &c. Under these circumstances, also in cases of physometra, we may be called upon to evacuate the contents of the uterus artificially.

In the congenital cases, we have to make a communication between the uterus and vagina in the best manner the circumstances may admit. We endeavour to find the os uteri, and, not succeeding in this, search is made for the cervix. We may fail in discovering any trace of either, the distension of the uterus having obliterated all traces of it. In such a case a point is to be chosen which is nearest the supposed seat of the cervix, and the opening is to be made at that point, taking care that the instrument used be directed towards the centre of the enlargement, so as not to run a risk of wounding the bladder or rectum. In reference to the manner in which the uterine contents are to be allowed to escape, certain precautions are necessary. It is advisable to allow the fluid to escape very slowly; the reasons for this precaution will be given in describing the treatment of the more ordinary

cases of menstrual retention due to imperforate hymen. After the first part of the treatment—the evacuation of the fluid—has been gone through, we have to take measures for maintaining the canal of the cervix open. This is not unfrequently found troublesome, there being a tendency to reclosure of the canal, necessitating a new operation. Gradual dilatation by means of metallic bougies is most appropriate under such circumstances.

The puncture of the tumour from the rectum is only admissible in cases where the other operation from the vagina is absolutely impracticable.

In cases of acquired occlusion of the os uteri, or cervical canal, the canal is to be opened and made pervious by a carefully performed operation, the nature of which must be determined by the nature of the case. In many of these cases it is possible to find out the track of the old canal by means of probes, and, if this can be done, it renders further procedures more easy. A small canula and trochar, long enough to reach the uterus, is necessary to evacuate the fluid. The canal once opened, the occasional use of the sound, or of graduated metallic bougies, is required to preserve its patency.

TREATMENT OF CASES OF MEMBRANOUS DYSMENORRHEA.

The treatment of the actual *pain* in these cases will be conducted on the principles already laid down. The object now is to determine how the disease itself is to be removed. The absolute cure of cases coming under this category is, however, a problem which is very frequently found incapable of solution, and the fact that the subjects of it are generally sterile, and not unfrequently extremely desirous of having children, renders this question additionally interesting. The cause of the condition is not obvious; as before stated, it appears that normally a membrane is thrown off from the uterus, in consequence of menstruation, which escapes observation, owing to its great delicacy and thinness. In the abnormal cases we have the same membrane greatly increased in thickness, having a great resemblance to the decidua of an early ovum. The circumstances under which this thick menstrual decidua is observed vary, and there is no special class of symptoms observable. It appears to be the habit of the individual to produce this membrane, and beyond this nothing certain can be elicited. There is often pain in one or other ovarian region; and it appears reasonable to conclude that in some way or other this pain is connected with the formation of the membrane. The intimate functional relation

between the ovaries and the uterus lends support to the view that, in a morbid condition of the ovary—a functional perversion, so to speak, of its influence over the uterus—we have an explanation of this abnormal occurrence.* During the last year, I have seen two marked instances of this condition, and the obscurity attaching to the subject will, perhaps, excuse a brief allusion to them.

The first case was that of a lady, æt. 30, who had been married three years, never pregnant; menstruation profuse before marriage. Since marriage, with very few exceptions, a thick membrane had been discharged at each menstrual period. It is probable, or at least quite possible, that this was the case before marriage, and that it was not seen previous to that time, because not looked for. The membrane is discharged usually not later than twenty-four hours from the time of the commencement of the discharge. At this time there is a stoppage of the discharge for an hour or two, the bag of the membrane then comes away, its expulsion being attended with severe pain, and the discharge then continues uninterruptedly for three or more days.

The second case was that of a lady, æt. 34, who had been married for thirteen years, but never pregnant. For the last eight years, certainly, probably for a longer time, a membranous bag, complete or in shreds, has been expelled at almost every menstrual period. The body in question makes its appearance always within the first few hours after the discharge has begun to flow.

In both of these cases the interval between the catamenial periods was long—five weeks. In the first case there was present a copious secretion of mucus from the uterine cervical cavity, in both there was pain in the left ovarian region, but in both cases this ovarian pain was not of old date. The most interesting fact appears to be the time of the menstrual period at which the membrane was expelled. This is interesting in regard to any explanation of its cause and nature. There appears to be no possibility of concluding otherwise than that the membrane actually expelled belonged to, or was the product of, the former menstrual period. If, normally, the menstrual decidua is thrown off from the uterus after the discharge has ceased, or at all events during the latter period of the discharge, it would appear that in these abnormal cases this exfoliation is postponed, the membrane continuing to grow during the inter-menstrual period.

* Some interesting remarks on this subject, with cases, will be found in Dr. Tilt's work, *On Ovarian and Uterine Inflammation*.

The sterility which is usually present under these circumstances probably results from the uterine mucous membrane being so altered pathologically as to interfere with the due and proper reception of the impregnated ovum when it arrives in the uterine cavity from the Fallopian tube.

On the subject of the treatment of these cases, the experience of most observers is not of a satisfactory or encouraging character, for there is little evidence to show that any great amount of good has followed the attempts made to remove the disease. Scanzoni avers that he has been most unsuccessful in the treatment of the affection.

One indication present in such cases consists in preventing that congestion and highly vascular condition of the uterus and adjacent organs which prevails at the menstrual period, from continuing longer than a certain number of days. In order to accomplish this, it would be advisable to employ either cupping to the extent of a few ounces over the sacral region a day or two before the expected period, or to apply leeches to the cervix uteri, and to keep up this treatment, adapting it, however, to the strength of the patient, or the requirements of the case, for some months. Immediately after the menstrual discharge has ceased, the patient should begin to use twice a day the vaginal douche (see p. 464), of cold water, employing a tolerable quantity of fluid for this purpose. On the view that the formation of the membrane is due to a morbid congestion of the uterus and adjacent organs, this treatment offers the best chance of success. Marriage has an effect in increasing the evil. In both the cases above related, the membrane was only observed after marriage; and while it is probable, as has been observed in other instances, that it was not seen before marriage, because not specially looked for, it must be inferred that the thickness of the membrane expelled was increased by the altered sexual relations of the patients. And as a step towards the cure of the affection, it is to be recommended that intercourse should take place at distant intervals only. Further, it may be desirable to widen the internal os uteri in certain cases by mechanical means, and so provide for the free escape of the menstrual products. The necessity for this latter procedure will be judged of by the condition of the canal. Any other abnormal condition of the uterus which may be found present must be rectified.

Dr. Dewees* states that in his practice he has found the tinc-

* *A Treatise on Diseases of Females*, 10th ed., Philadelphia, 1854, p. 123.

ture of guaiacum of great efficacy in the cure of cases of membranous dysmenorrhœa—‘in more than a hundred’ instances. This remedy was largely used in this country by the late Dr. Rigby, who employed it, however, for all cases of dysmenorrhœa in which he conceived a rheumatic diathesis to be present; Dewees’ recommendation applies for the most part to cases in which a membrane is expelled. The statements of Dr. Dewees, as to the value of this remedy, are not confirmed by the experience of practitioners, who, like Dr. Meigs, have given it a fair trial.

The treatment of this affection by means of local applications, such as caustic, to the lining of the uterus, has been recommended by Dr. Simpson, but evidence is wanting of the good effects of the practice in question.

CHAPTER VI.

TREATMENT OF CERTAIN SYMPATHETIC AFFECTIONS ARISING FROM DISORDER OF THE GENERATIVE ORGANS. NAUSEA AND VOMITING. HYSTERICAL SYMPTOMS.

NAUSEA AND VOMITING.—Removal of the Cause; Means of feeding the Patient; Remedies, internal and otherwise.

HYSTERIA.—Preventive Treatment; Importance of Attention to the general Health—Moral Treatment; Avoidance of Sexual Excitement, &c.; Propriety of recommending Marriage in single Women; Relief of Hysterical Symptoms, Flatulence, Pain, &c.—Hysterical Convulsions.

IN the present chapter it is proposed to offer some remarks concerning the treatment of certain affections which, when arising out of, or in some way or other intimately connected with, the presence of disorder of the generative organs, occasionally give rise to considerable difficulty in respect to their management and treatment.

TREATMENT OF NAUSEA AND VOMITING ARISING FROM DISORDER OF THE SEXUAL ORGANS.

We are occasionally called upon to administer relief in a most troublesome class of cases—where the patient is affected with a continuous, uncontrollable vomiting or nausea, or both combined; and where the patient appears to be in danger of dying from starvation. At other times, where the symptoms are less severe, they are not less troublesome and difficult to remove, and our utmost skill and patience are taxed in the endeavour to allay the vomiting or the persistent nausea.

The primary object in the treatment of these troublesome cases should be, of course, to remove the cause. Unless the patient be pregnant, and the sickness be connected therewith, the cause should, if possible, be removed. The congestion or inflammation of the uterus, or the obstruction to the catamenial flow, or the abnormal

condition of the generative organs, whatever that may be, must be appropriately treated.

The removal of the causes in question is, however, generally a matter of time, and meanwhile the patient requires relief from the present symptoms. In severe cases, where the stomach persistently rejects food, it is best at once to give up the idea of administering solid food of any kind. The patient should be made to suck small pieces of ice from time to time, and a tea-spoonful of milk or milk-and-water should be swallowed every half-hour, or more frequently, if possible. At the same time, the horizontal position and absolute rest and quiet are to be maintained. Minute quantities of brandy-and-water or champagne may be given every hour. This kind of treatment is adapted for cases of obstinate sickness during pregnancy, or in chronic uterine disease. Drugs given by the mouth, in really severe cases, appear to do more harm than good. An opiate liniment rubbed in over the epigastric region, or morphia applied endermically, has been found of great service. If the milk or other nutritive material, such as beef-tea, which may be tried, are rejected by the stomach, it is best to relinquish for a time the attempt to feed the patient by the mouth at all, and to have recourse to injections. A beef-tea enema with a few drops of laudanum may be given as often as may be judged necessary, the return to a more natural method of feeding being for a time postponed. Sedatives, antispasmodics, or medicines of other kinds may or may not be indicated, according to the peculiarities of the case, but they will be best administered in these severe cases by the rectum.

In the less severe cases, where food is capable of being taken by the stomach with more or less facility, and where the vomiting is only occasional, a carefully-adjusted diet will still be the best means of giving the patient relief, and it will be a matter of experiment as to what kind of food suits best. Soda-water and milk are very generally borne by the stomach, but more substantial nourishment may be given, such as the case admits of. Pepsine—of which a reliable preparation is kept by Mr. Squire—is often very serviceable in cases where the digestive powers are much weakened.

Dr. Tilt speaks very highly of counter-irritation over the epigastric region, by a seton, or by blisters, in chronic troublesome cases. I have found the application of small blisters to the epigastric region a very ready means of introducing morphia, which is sprinkled over the blistered surfaces: I have been frequently

disappointed in the action of the various drugs recommended as specifics in the treatment of obstinate sickness.

Whenever pain in the uterine region is present in cases of sickness—as is most frequently the case—opiates in some form or other are required. If the sickness be incessant, they are to be given in the form of enema.

To allay the thirst present more or less in all cases, effervescing drinks are most useful. In the violent sickness which is apt to follow severe operations, such as ovariectomy, and which must be checked if the patient is to be saved, ice, champagne in considerable quantities, enemata of nourishing materials and opiates, are to be administered. This treatment has been most generally successful.

The ordinary morning sickness of *pregnancy* is often very effectually relieved by directing the patient to take a small quantity of food before rising from bed. In cases of sickness due to this cause, the general principles of treatment above laid down hold good. By carefully regulating the condition of the bowels, giving occasionally gentle aperients, and making suitable alterations in the diet of the patient, much good will be effected, even if we cannot entirely remove the liability to sickness. In a few cases it is necessary to induce premature labour. Some very practical remarks on this subject, as well as on the treatment of other disorders peculiar to pregnancy, will be found in Dr. Tanner's work,* before referred to.

TREATMENT OF HYSTERIA IN CONNECTION WITH THAT OF DISEASES OF THE SEXUAL ORGANS.

The subject of hysteria occupies a sort of neutral ground, for although it is, as a rule, perhaps, to be looked upon as a general affection, there can be no doubt that between diseases of the generative organs and hysteria there is in many cases a very close connection, and it is impossible, in reference to treatment, practically to dissociate them.

The *general*, i.e. the preventive and curative, treatment of hysteria must be adapted to the special requirements of the patient. There are few cases which come before us in practice in which we do not find some very decided indication for treatment, either in the removal of the patient beyond the influence of certain circumstances or conditions which have been previously found to produce the attacks, or in improving a manifestly weakened and

* *The Signs and Diseases of Pregnancy.* Lond. 1

diseased condition of the system generally, or, lastly, in curing or ameliorating some conjoined affection of the uterus or generative organs. In many cases we find it necessary to improve the general health, to exercise a rigorous moral rule over the patient, and at the same time to treat specially some troublesome uterine ailment. The degree of attention paid to the various diseased elements in the case, will be guided by our estimation of their respective importance, and by our own peculiar ideas on the subject of the nature and causes of hysteria. On the whole, it appears that the element in cases of hysteria which can with least propriety be neglected, is the disordered condition of the system generally.

A complete change of scene or of occupation, both mental and bodily, is the best remedy in cases where the disease is confirmed. It has been found, as a matter of experience, that hysterical patients in easy circumstances become often materially benefited as regards their health by reverses of fortune, these having the effect of directing their thoughts into different channels, creating new anxieties of various kinds, and relieving them of their bodily ailments. Revolutions, sieges, or other public events, of absorbing attention and interest to the community, are favourable to the cure of hysteria.

It is a matter of observation and experience, that abnormal excitation of the sexual system is very frequently found to be associated with hysteria; it would seem that this circumstance has led many to believe that hysteria is never anything more than a morbidly increased or excited sexual desire, which in its mildest form is simple hysteria, but when more confirmed, and at a later period, may become nymphomania. If this mode of viewing the question be wrong, it is evident that, practically, a great amount of mischief may result from it, for the curative treatment being directed exclusively to the removal of everything leading to sexual excitement, other, perhaps equally, important features in the case are passed over, and comparatively neglected. There are unquestionably a very considerable number of cases in which removal of all sexual exciting influences forms a very essential part of the treatment, but there are others in which precautions on this score would seem to be entirely uncalled for. The precautionary and moral treatment must be, then, adapted to the peculiarities of the case. Respecting the improvement of the condition of the bodily health, little can be said of a special nature, and which would not equally apply to many other disorders to which women are liable.

Regular living, plain and simple but nourishing diet, avoidance of mental excitement or effort, free exercise, as soon as the patient can bear it, in the open air, the use of the sponge or the shower-bath, with assiduous friction of the cutaneous surface, and such other special hygienic measures as may be indicated—these constitute the basis of the treatment. It is often found exceedingly difficult to enforce obedience and attention to medical rules and regulations in these cases, and, unless carefully watched or supervised, they are frequently set at naught. Ferruginous preparations combined with slight laxatives, are the medicines most commonly required. And they are most advantageously administered in the form of mineral waters. Great good is often derived from residence at a watering-place, due not only to the therapeutic action of the water, but to the novel and regular mode of life there pursued. Benefit of a permanent character is not to be expected in long-standing cases, until after the lapse of some considerable time, for the habit of disease has to be broken through.

It is frequently found that the subjects of hysteria have been exercising the mental faculties at the expense of the physical. In guarding against the occurrence of hysteria, therefore, an extremely important element in the treatment is the careful avoidance of all sources of mental excitement. The great object should be to develop the physical energies, to cultivate the activity of the locomotive apparatus, and to restrain, as much as possible, the exercise of the mental faculties. The sexual tendencies require to be kept in subjugation, and in many cases, though probably not so often as generally supposed, special care is necessary in this particular. It is not easy to say how far, or in what special manner, this part of the treatment should be carried out, for hardly two cases admit of being treated alike, the surrounding circumstances being, perhaps, essentially different, even where the symptoms present may be identical.

Marriage is occasionally recommended as a cure for hysteria in single women. On this point there is a discrepancy of opinion. The fact appears to be, that in those cases where slight hysterical symptoms coexist with strong sexual inclinations on the part of the individual—which are really cases of nymphomania in a mild form—marriage may be a good thing, but that in cases where this abnormal sexual excitement is not present, marriage has very little, if any, curative effect.

In cases of hysteria associated with undue sexual excitement, and in which also the uterus is diseased, it appears undesirable to

enforce a plan of treatment of a manipulative character, that is to say, if the treatment in question is to be pursued for any length of time; the reason for which will be obvious to the reader.

Relief of Hysterical Symptoms.—The most distressing symptoms presented by hysterical patients, and for which relief is most urgently sought, are, flatulence, headache, and pain in the side. The flatulence is best treated by cordials; ginger, sal-volatile, and ether, may be given for this purpose in combination. Relief in this way is of course only temporary, and the dyspepsia, on which the flatulence depends, must be treated by suitable measures. An assafœtida injection has been found to afford temporary relief in some cases. Pain in the side is a symptom to be treated by opiate liniments; counter-irritation is not generally of much service, unless it be counter-irritation of the whole surface of the skin by use of flesh-brushes, &c.; this latter is very serviceable in the general treatment of hysterical patients.

In reference to headache, the same remarks as to the necessity for general treatment hold good. I have found both opiate and chloroform liniments of great service. Bark, in the form of the 'liquor cinchonæ,' is a valuable remedy in many cases where there is severe headache, associated with anæmia. Ether, valerian, and other antispasmodics, are often also necessary in these cases. A draught containing twenty minims each of tincture of lavender, compound spirit of sulphuric ether, and sal-volatile, with camphor mixture, is a very suitable and efficacious one for the temporary relief of these hysterical pains, as well as in the relief of pains of various kinds, as I have already had occasion to remark.

Paroxysms of Hysterical Convulsions must be guarded against by preventing the application of the ordinary exciting cause, whatever that may be. For the relief of the paroxysm itself, a variety of methods may be recommended. Dashing of cold water in the face is one of the most efficacious, though, for a variety of reasons, it cannot always be adopted. Chloroform inhalation is very effective; it has always succeeded, in my hands, with a patient in whom the attacks consist of sudden access of lethargy, combined generally with unilateral convulsions, the convulsions ceasing instantaneously under the action of the remedy. Application of burnt feathers or other strongly-smelling substances to the nostrils is often efficacious.

Valerian, castoreum, assafœtida, ether, musk, camphor, are the drugs most commonly had recourse to, either in cases where the paroxysm is imminent, or, when it has ceased, with the view of

preventing its recurrence. These remedies may be given singly, or two or more may be combined. Injections of cold water into the stomach were found very efficacious in arresting the paroxysm by Cruveilhier, and also by Dr. Ashwell. Injection of iced water into the rectum has been also recommended.



CHAPTER VII.

TREATMENT OF AFFECTIONS OF THE EXTERNAL GENERATIVE ORGANS; AND OF THE URETHRA AND BLADDER.

Laceration of the Perinæum—Œdema of the Labia—Oozing Tumour of the Vulva—Abscess and Boils—Blood-tumours of the Labia—Tumours—Lupus of the Vulva—Cancer of the External Generative Organs—Vulvitis—Eczema of the Vulva—Follicular Inflammation—Hypertrophy of the Clitoris—Condylomata, Warts, &c., of the Vulva—Pruritus of the Vulva.

Vascular Tumour of the Meatus Urinarius—Eversion of the Urethral Mucous Membrane—Polypus of the Bladder—Chronic Urethritis—Stricture of the Urethra—Retention of Urine—Cystitis—Incontinence of Urine.

LACERATION OF THE PERINÆUM.

THE treatment to be adopted in cases of laceration or rupture of the perinæum will vary according to the extent and nature of the injury. Mr. Baker Brown, who has devoted much attention to the subject, and who has been very successful in relieving bad cases of rupture, lays down the following rules as regards the treatment: *—Where the rent is an inch or less in extent, no operative measures are necessary, quiet and cleanliness being sufficient for the cure. In those extremely rare cases where there is actual perforation of the perinæum, the vaginal and anal sphincters being left intact, Mr. Brown recommends division of the anterior band at the fourchette, and then use of the quill- and interrupted-sutures, for bringing the parts together. Next come cases in which the perinæum is ruptured widely, but the anal sphincter is intact; and fourthly, cases of the worst kind, viz. those in which the laceration has laid the vagina and rectum open one into the other, the sphincter ani being entirely torn through. The treatment for the two latter classes of cases consists in denuding, by means of a scalpel, the opposed surfaces of the rent, of all mucous membrane with which they are covered, as far back as the margin of the fissure. Next, the sphincter ani is divided on both sides

* *On Surgical Diseases of Women*, 2nd ed., London, Davies.

a quarter of an inch in front of its attachment to the os coccygis by an incision carried outwards and backwards, the bistoury being for this purpose introduced within the margin of the anus. The parts are then brought together—1, by deep quill-sutures, introduced an inch outside the edges of the incision; and 2, by three or four interrupted superficial sutures; the deep sutures being of twine, the superficial of iron or silver wire.

So far for the operation itself. The subsequent treatment consists in maintaining a lateral position, the knees being kept closed, and one grain of opium being given at once, and repeated every six hours for the first twenty-four hours, but afterwards twice a day. After the first day, generous diet. The catheter to be used every four or six hours for three or more days, care being taken to prevent the escape of urine into the vagina. The deep sutures are removed in 54 hours, the smaller ones in about a week, but the thighs to be kept in apposition for some time. No action of the bowels is to be allowed for two or three weeks after firm union, when warm injections are to be employed. Such are the principal precautions to be enforced.

There has been some question as to the proper period for operating in cases of ruptured perinaeum, that is to say, as to whether an operation should be performed immediately after the injury has been inflicted: it has been considered by some authorities that the operation should be deferred until the patient has recovered from the effects of the labour. Mr. Brown argues, and, as it appears to me, conclusively, in favour of an immediate operation. In favour of the latter conclusion we have the circumstance that the edges are already raw, and only require to be brought together in order that they may have the chance of uniting by the first intention; the operation is thus simplified. If the operation be not, however, performed within a few hours of the occurrence of the rupture, it appears desirable to wait until the lochial discharge has entirely ceased.

OEDEMA OF THE LABIA.

In cases where the labia are oedematous, rest in the horizontal position, emollient applications, such as poppy fomentations, or an evaporating lotion, composed of a mixture of spirit and water, afford great relief, and are usually sufficient. When the swelling is extreme, troublesome excoriations, produced by the opposed surfaces rubbing one against the other, may be witnessed. In such cases, lint dipped in the lotion must be applied between the parts affected, so as to prevent friction.

OOZING TUMOUR OF THE LABIA.

Extirpation of the labium has been performed by Sir C. M. Clarke, and, according to Dr. Churchill, by Mr. Rump also, for the cure of this affection. Dr. Churchill recommends great attention to the state of the general health in such cases, and administration of a good, generous diet. Rest, the use of astringent applications, as starch, decoctions of oak bark, or lotions, constitute the palliative treatment. Our present knowledge of the disease is somewhat vague and unsatisfactory; few opportunities are afforded for observing it, or for ascertaining whether it be a peculiar disease, or a modified form of the affection known as eczema of the vulva.

ABSCESS OF LABIA; BOILS.

The ordinary circumscribed abscess of the labium which arises out of inflammation, or obstruction of the duct of the gland here situated, is best treated by early incision. After the opening has been made into it (which should never be done until the question of the swelling being possibly due to a hernia has been considered and dismissed), warm poultices should be applied, and perfect rest enjoined; opiates are necessary to relieve the pain.

For the cure of boils of the vulva, Dr. West recommends the application of nitrate of silver freely at an early stage of the affection. Cleanliness is very essential.

BLOOD-TUMOURS OF THE LABIA.

The 'thrombus' of the vulva, as it has been termed, is a coagulum of blood, the result of hæmorrhage into the cellular tissue of the part affected. These tumours may be of considerable size. They are best treated by rest, the continued use of an evaporating lotion, and are not to be meddled with surgically,* unless the coagulum—which is rare—undergoes liquefaction, and a sort of abscess results; in which case puncture may be required.

The hæmorrhage which is liable to occur from bursting of these tumours, is to be treated by very careful and continuous application of pressure combined with cold. This hæmorrhage has occasionally proved fatal.

TUMOURS OF THE LABIA.

The various forms of tumour of the labia are usually only to be treated by one method, viz. excision. The operation required

* See some important remarks on this subject in Dr. M'Clintock's recent work, n. 285.

will be adapted to the peculiarities of the case. The risk attendant on such operations is not usually considerable, but when the tumour is very large, or attached by a broad base, the hæmorrhage may be difficult to restrain, and it may be necessary to secure the vessels one by one as the operation is being performed; in some cases, it is advisable to transfix the pedicle thrice or more, in order to secure control over the hæmorrhage preparatory to commencing the incision.

The *encysted tumour of the vulva* is best treated by dissecting it out; if preferred, it may be simply punctured, but the cyst is then liable to refill.

LUPUS OF THE VULVA.

It appears that complete recovery from lupus of the vulva is rare, though the disease is susceptible of much alleviation by treatment. Long courses of small doses of mercury and iodide of potassium would seem, from Dr. West's experience, to be most efficacious. Scanzoni recommends the local and internal use of iodine. Huguier and West both insist on the extreme advisability of removing the nymphæ or any of the adjacent parts, readily admitting of extirpation, when the ulcerations upon them appear indisposed to heal. Dr. West also urges the removal of the excrescence apt to form in such cases as preparatory to other measures; and he considers the actual cautery preferable to any kind of chemical escharotic, as a means of healing the ulcerations produced by the disease. Martin* of Berlin records a case in which he applied fuming nitric acid to the affected parts, the patient being under the influence of chloroform, and subsequently a milder caustic, in the shape of nitrate of silver. The case, that of a patient æt. 25, terminated satisfactorily. The destruction of the surface affected by means of potassa fusa, as successfully practised by Dr. Humphry in cases of lupus of the face, would appear to be a means of treatment likely to be applicable in cases of this rare disease.

CANCER OF THE EXTERNAL GENERATIVE ORGANS.

When, as is ordinarily the case, the disease belongs to the epithelial variety, early excision should be practised, the position and relations of the tumour being such as to render the removal practicable. When the disease has so far advanced that deep

* *Monatsschrift für Geburtsh.* Nov. 1861, p. 348.

ulcerations are present, operations are not admissible, and our treatment is a simply palliative one. (See 'Treatment of Cancer of the Uterus.')

VULVITIS.

In the treatment of vulvitis, regard must be had to the causes of the inflammatory action present. Gonorrhœa, syphilis, masturbation, epidemic influences, causing vulvitis, give rise to various kinds of inflammatory disturbance, and require appropriate treatment.

Cleanliness, frequent ablutions, or use of the hip-bath, are required in all cases. Soothing lotions, such as decoction of poppies, are frequently necessary to allay pain. Sponging with tepid water, or application of tepid water by means of a glass syringe, may be had recourse to with advantage, whatever be the cause of the inflammation. Astringent lotions, solution of alum or goulard water, must be used at a later period. The patient should be kept at rest, the labia being separated by a piece of lint dipped in the lotion used. If the inflammatory action rise high, leeches may be required. If abscess be threatened, poultices of bread or linseed meal constitute the best application. Internally, saline purgatives are often required; opiates may be necessary to allay pain, or to procure sleep. In cases where masturbation is practised it has been found serviceable, in the case of children, to blister the surface; this deters from a continuance of the practice by the pain it involves.

The gonorrhœal cases require a special treatment. The indications are—first, to subdue inflammatory action by the measures already mentioned, after which copaiba or cubebs may be administered internally, and a rather strong solution of alum used frequently as a local application. Further information as to the treatment of gonorrhœa and syphilis will be found in the text-books on surgery. Cases of vulvitis due to epidemic influences, and occurring specially in children, require great cleanliness, use of astringent applications, a liberal diet and exhibition of tonics; cod-liver oil, or syrup of iodide of iron, are the most suitable. If ascarides be present, an injection of camomile tea into the rectum is the readiest method of removing them.

In *chronic* cases of vulvitis, from whatever cause, the local application of a rather strong solution of nitrate of silver is often found of great service, especially in those cases where the patient suffers also from pruritus.

ECZEMA OF THE VULVA.

In the treatment of simple cases of this affection, in addition to rest, ablutions, &c., the use of lotions of glycerine, or of solution of carbonate of soda, will be found efficacious; when the disease is chronic, caustics are often the only effectual remedies. Dr. West employs the solid stick of nitrate of silver, Scanzoni employs caustic potash in solution ($\frac{1}{2}$ drachm, to 1 oz. water).

FOLLICULAR INFLAMMATION OF THE VULVA.

Frequent ablutions with tepid water, the use of a weak lead lotion, rest, and attention to the general health, will do much to remove the disease. Dr. Oldham's favourite remedy is an ointment containing hydrocyanic acid (2 drachms), diacetate of lead (a scruple), and cocoa-nut oil (2 ounces), the parts being bathed with cool water before applying the ointment. In some cases of this affection which have come under my own notice, I have used nitrate of silver, in the form of a strong solution, with satisfactory results.

HYPERTROPHY OF THE CLITORIS.

When the clitoris is hypertrophied, its removal may be necessary on account of the mechanical inconveniences the presence of a large tumour in this situation produces. The removal of the clitoris has been practised by Mr. Baker Brown, in some cases where the organ is indurated, without considerable enlargement, with the object of preventing self-abuse, and, as it is stated, with good effect. In some cases of epilepsy, traceable to undue and unnatural excitation of the generative organs, Mr. Brown believes that good may be effected by removal of this organ.

The amputation of the clitoris is not a difficult operation, unless the organ be very large. Mr. Brown removes either the glans alone, or together with this a portion of the crura, if the latter be found in an abnormally indurated state.

REMOVAL OF CONDYLOMATA, WARTS, &c.

Where the condylomata are large and numerous, the preferable plan is to use the knife for their removal, the patient being placed under the influence of chloroform. Strong nitric acid or lunar caustic may be used in other cases. The black wash, or a strong solution of iodide of potassium, should be subsequently applied

freely; anti-syphilitic remedies are to be given internally. The smaller warts may be removed by a pair of scissors.

PRURITUS OF THE VULVA.

The *general* treatment consists in correcting whatever may be found wrong or prejudicial to health in the habits, mode of life, diet, and regimen of the patient. The digestive organs should be duly watched, constipation prevented. The food given must be light and simple. In that form of the affection observed in women past the climacteric age, where there is debility, defective digestion, and want of appetite, without any, or, at all events, any considerable alteration of the skin covering the pudendum, mineral acids combined with bitter infusions are of the greatest service.

The *local* treatment consists in the removal of any condition which may be found to be associated with the pruritus, whether it be the cause or the effect of the same. And this local treatment will be, according to the nature of the case, palliative or curative. The local treatment will necessarily vary according to the actual condition of the parts discovered on examination. It is generally the case, indeed, that some abnormal condition of the surface of the labia and adjacent parts is present, which, as before remarked, may be primary or secondary as regards the pruritus. In some cases, the local treatment is all that is necessary for the cure. Cleanliness is the first essential. The external genitals must be frequently and thoroughly washed with tepid or quite cold water. The hip-bath should be frequently used, for the application of water is almost always grateful to the patient. If there be much fulness of the blood-vessels of the vulva, leeches are sometimes necessary.

Respecting special topical remedies, Scanzoni speaks most highly of a mixture consisting of chloroform two parts, and almond oil thirty parts, to be applied to the surfaces of the labia and of the ostium vaginæ. This, he states, often cures on a first application. I have found this remedy of the greatest service, but the quantity of chloroform is too small. One part of chloroform in six of oil is the proportion I have used. Dr. West finds goulard water and hydrocyanic acid a very valuable application. When aphthæ are present, borax in solution with a little morphia (borax ζ iv., morph. hydroch. gr. viij., rose-water O ss.—West) has been found very efficacious. Respecting the treatment of cases which resist the more ordinary curative means, the following

therapeutic measures are selected as most highly recommended. The late Dr. Rigby found an ointment composed of equal parts of ung. hyd. nit. ox. and cod-liver oil, very successful when other measures had failed. Alum and powdered sugar sprinkled over a tampon of cotton, and inserted in the vagina twice a day for a week, is a remedy used by Scanzoni. The latter author states that Scholz's remedy, the calladium sequinum, has in his hands given satisfactory results. Cauterisation by means of nitrate of silver has been employed by several, with advantage in some cases. When pediculi are present, Dr. Churchill advises the use of turpentine, tobacco, or calomel in powder.

When, owing to constant scratching and rubbing, the labia, nymphæ, &c., are swollen, inflamed, and painful, it is essential that the patient be made to rest in the horizontal position for a few days; the parts may then be kept wet with the goulard and hydrocyanic-acid lotion, and a piece of lint or soft rag, wetted with it, laid between the labia.

VASCULAR TUMOUR OF THE MEATUS URINARIUS.

The tumour is to be carefully dissected off from the surface to which it is attached by means of a small scalpel, and strong nitric acid applied lightly to the cut surface. If a difficulty be experienced in seizing it with the forceps, Dr. M'Clintock's plan of catching it in a kind of snare may be adopted. Other methods of treatment, such as cauterisation with nitrate of silver, &c., may be in the end as efficacious as the plan just mentioned, but they require a longer time, and are therefore less satisfactory. There is hardly any affection to which women are liable which causes more uneasiness and discomfort, or which is removed more easily. Warty vegetations are sometimes observed growing just outside the meatus. In a case of this kind which came under my own notice, the affection gave rise to very painful pruritus; in another, a large crop of warty growths were present, and had given rise to considerable difficulty and pain on intercourse, and it was found that, in this latter case, the growths were of syphilitic origin. In both cases, removal by means of the knife was the treatment adopted.

EVERSION OF THE URETHRAL MUCOUS MEMBRANE, OR OF THE BLADDER ITSELF,

should be treated by reduction, by rest, and the careful application of lint dipped in cold water as a compress. The retention of a

catheter in the bladder, recommended by some, would seem calculated to increase the irritability of the parts.

POLYPUS OF THE BLADDER

is a condition which rarely comes under our notice. In Mr. Birkett's case, where the polypus projected through the urethra, excision was performed. The child—greatly exhausted at the time—died. Dr. M'Clintock is probably right in thinking that the *écraseur* would suit such cases best. Small polypi of the urethra should be treated in the same manner.

CHRONIC URETHRITIS.

The treatment of chronic urethritis consists in rest, the use of the tepid hip-bath, avoidance of all sources of irritation, observance of cleanliness, use of astringent lotions, or injection of weak solutions of alum or sulphate of zinc into the urethra itself. Such treatment will be sufficient in simple cases. Of internal remedies, *copaiba* has proved the most effectual remedy in the cases recorded by Drs. Ashwell and M'Clintock, and it may be recommended to be given in conjunction with application of the other remedial measures mentioned, in all cases, and whether suspected to be of gonorrhœal nature or not. The disease is undoubtedly a difficult one to cure; especially is this the case where a thickened condition of the urethra is present: great patience is generally required in order to bring the case to a successful issue. The application of nitrate of silver, powdered and diluted with sugar, or in solution, is sometimes necessary, especially in cases where the mucous membrane of the urethra is ulcerated.

STRICTURE OF THE URETHRA.

In the management of the organic contractions of the urethra, says Mr. Henry Thompson, 'the use of dilatation, assisted, when necessary, by a division of the opposing part, . . . will generally be sufficient for their removal.'* As before remarked, stricture of the female urethra is exceedingly rare. The shortness of the canal, and its great accessibility, should render operative measures easy of application.

RETENTION OF URINE.

In many cases which come before us, it is necessary to evacuate the contents of the bladder artificially, the patient being prevented, for some reason or other, from accomplishing it.

* *Op. cit.* p. 384.

The catheter is the instrument by means of which the relief in question is obtained; and it may be well, in this place, to give a few directions as to the manner in which this instrument is best introduced.

Mode of introducing the Female Catheter.—Ease in the use of the instrument is only to be attained by practice, but the operation is usually effected without much difficulty, by one conversant with the anatomy of the parts. The plan to be adopted is the following:—The patient is to be laid on her back; the operator is to stand on her right side; the right leg is to be flexed, the sole resting on the bed or couch. The operator then, by means of one finger of the left hand carried from the abdomen over the pubes, ascertains the position of the clitoris, and of the urethral orifice just beneath it, and, having done this, the right hand, holding the gum-elastic or silver catheter, is passed under the right leg, and the point of the instrument guided into the urethral canal. The principal thing is to make certain, in the first instance, of the position of the clitoris and urethral orifice; the latter is known by the fact that the vaginal canal is immediately below it. If the finger be introduced into the vagina, the urethral canal must therefore be in the median line immediately above it.

It is convenient to have a slender india-rubber tube, five feet long, attached to the catheter. The urine then flows directly into the receptacle placed on the floor.

In cases where the retention of urine is due to dragging upwards of the bladder by tumours of various kinds, and pressure on the urethra, the direction of the urethral canal is much altered. In such cases, a gum-elastic catheter should be always used, and care is required in order to avoid injuring the walls of the canal.

AFFECTIONS OF THE BLADDER.

Chronic Inflammation of the bladder is an affection which in some shape or other comes before us rather frequently. After parturition, after operations about the genital organs, it is not unusual for the mucous membrane of the bladder to take on an inflammatory action, which at one time results in the exfoliation of the lining membrane, at another leads to chronic cystitis, with constant secretion of a ropy mucus, an ammoniacal state of the urine, occasional passage of blood, great distress and frequency in micturition, pain in the region of the bladder, and other troublesome symptoms. It is important to bear in mind, that the symptoms referable to the bladder are frequently really due to morbid

conditions of the kidneys or ureters, or both. Information respecting the diseases of these organs will be found in standard works on medicine and surgery. Incontinence of urine is an affection liable to supervene on labour, when the urethra has been subjected to long-continued pressure.

The timely use of the catheter after labour will prevent that destructive *cystitis*, which may be produced by inability of the patient to evacuate spontaneously the contents of the bladder. If cystitis be actually present, with fever, pain, and tenderness, leeches may be required. Demulcent liquids should be given, such as barley water, and all irritant articles of food avoided. Rest is exceedingly important.

In the *chronic* form of the disease, cystitis is best treated by the administration of the diluted mineral acids; uva ursi and pareira brava are medicines very generally found serviceable in combination with the mineral acids. My friend, Mr. Henry Thompson, has lately made use of a decoction of the underground stem of the *triticum repens*, in cases of chronic cystitis in the male sex, and has found it of very great service in relieving the various distressing symptoms present in such cases. It is probable that the remedy may be found equally efficacious in the chronic inflammatory affections of the bladder to which women are liable. This distinguished surgeon states, in reference to the use of demulcent decoctions, infusions, &c., in affections of the bladder, that large quantities are necessary in order that they may prove beneficial. Respecting injections into the bladder in cases of chronic cystitis, Dr. West does not report favourably, but he speaks highly of the employment of a seton introduced just above the symphysis. The general treatment of the patient in these cases is a matter of great importance; some patients require a liberal diet and regimen, while with others the indication is quite the opposite. The pain and suffering present in cases of cystitis must be relieved by opiates, and these require frequently to be given in considerable doses.

For the relief of incontinence of urine after labour, which may be more or less complete in degree, time is the great remedial agent. Repeated ablutions of the external genitals have a good effect in restoring the lost tonicity of the sphincter of the bladder. As a general rule, tonics are indicated, and the patient is to be encouraged by the hope—generally a well-founded one—that in the end the lost control over the evacuations of the bladder will be regained.

CHAPTER VIII.

TREATMENT OF DISEASES OF THE VAGINA.

Agglutination of the Labia—Obstruction due to the Hymen; Treatment of Cases in which there is simply Obstruction to Intercourse; Treatment of Cases of Imperforate Hymen with Menstrual Retention—Absence of Vagina; with and without Menstrual Retention—Stricture of the Vagina—Simple Narrowness of the Vagina—Spasm of the Vagina (Vaginismus)—Vesico-vaginal Fistula—Recto-vaginal Fistula—Vaginitis—Tumours growing in or from the Vaginal Walls.

THE most important affections of the vagina calling for treatment are those constituted by an impervious condition of the canal, or in which the canal is the seat of an obstruction, and difficulty of various kinds arises therefrom. The treatment of the several forms of obstruction likely to be met with will be first considered.

AGGLUTINATION OF THE LABIA.

This is a condition generally met with in children, and it requires to be treated in the following manner:—The ivory handle of a scalpel is dipped in oil, the extremity of the handle inserted just below the urethral orifice, and the separation effected by pressing the edge of the handle against the obstruction, which usually readily gives way. A piece of oiled lint may be introduced between the separated labia, and there left for a day or two. Incision may possibly be necessary in those rare instances in which the agglutination persists until after puberty.

OBSTRUCTION DUE TO THE HYMEN.

The treatment for the relief of this condition must be adapted to the peculiarities and requirements of the case. In patients who have menstruated, the obstruction usually requires to be removed on account of its interference with the performance of sexual intercourse: in some cases obstruction to sexual intercourse thus caused accounts for the presence of sterility. The treatment of such cases is simple. The operator having carefully made out

by examination the shape, size, and relations of the hymen, which, under these circumstances, may be found exceedingly dense, firm, and thick, introduces a blunt-pointed bistoury through the aperture in the hymen, which is usually situated immediately beneath the urethral orifice, and a crucial incision is then made in the obstructing membrane, care being taken not to involve the vaginal wall itself in the incision; or, as recommended by some authorities, a circular piece may be actually cut out, the whole hymen being thus removed. The one procedure may be superior to another in a particular case. After the operation a piece of lint rolled up in a cylindrical form and dipped in oil, should be carefully introduced. The tampon of lint should be so large as to slightly distend the canal and prevent the healing by the first intention. The lint will have to be removed, and a fresh piece inserted twice a day, for the next two days.

With reference to the treatment of cases of

IMPERFORATE HYMEN, CAUSING MENSTRUAL RETENTION,

the proper course to be pursued must be considered still open to question. The difficulty is, not in affording relief to the patient and giving an outlet to the pent-up menstrual fluid, but in preventing the death of the patient from the operation. In a certain number of cases death has taken place after perforation of the membrane, for the relief of menstrual retention, and blood has been found effused into the peritoneal cavity, thus giving rise to peri-uterine hæmatocele. In other cases death has occurred, without effusion of blood in this manner, from peritonitis and pyæmia.

In these cases of menstrual retention, the uterus, the Fallopian tubes, and the vagina are distended with blood, the uterus attaining sometimes a very great size, and reaching as high or higher than the umbilicus in extreme cases; this state of things having persisted for several months, in some instances even for years, before the nature of the case has been recognised, or at all events before effectual relief has been attempted. The cavities containing the blood have their walls greatly thinned and otherwise altered.

It is the opinion of Bernutz,* that the unfortunate result, when associated with intra-peritoneal hæmorrhage, is due to the contraction of the uterus, set up by the evacuation of the fluid, continuing and forcing the blood contained in the Fallopian tubes into the peritoneal cavity. This explanation probably holds good in

* *Clin. Méd. sur les Maladies des Femmes*, tom. i. p. 68.

most cases of this kind. The fatal result, in some instances, may be due to a combination of one or more circumstances. The sudden withdrawal of the distending force in cases where the walls of the Fallopian tubes have been thinned and enlarged, must itself have an injurious effect on the vitality of the tissues of the part in question. A certain number of deaths are to be attributed to purulent absorption, the admission of air producing decomposition of the blood and pyæmia. It is evident that the circumstance pointed out by Bernutz is exceedingly important, in reference to the plan of treatment to be adopted in these cases.

A careful survey of the facts on record would seem to lead to the conclusion that a fatal result is much more likely to occur when the retention has lasted a long time; and the prognosis would consequently be more favourable for an operation performed two months, than in the case of an operation performed six months after the first attempt at menstruation. And this would clearly indicate the great importance of an early and complete diagnosis of the case. With respect to the operation itself, it is evident that in a case of retention due to imperforate hymen, the mechanical is the only treatment possible. A way must be prepared for the evacuation of the fluid, and to allow of the occurrence of menstruation. The mode of performing the operation appears open to improvement. In the first place, it would seem to be extremely desirable that the evacuation of the fluid from the generative passages be spread over as long a period as possible, in order to prevent undue and irregular action of the uterine fibres, and to allow time for the parts to return in the most gradual manner to their proper size. In the second place, it is absolutely necessary to avoid all possibility of passage of air into the vagina and uterus during or after the operation. The plan ordinarily adopted has been, by means of a lancet, or bistoury, or trochar, to make an opening in the hymen sufficient to allow of the escape of the chief part of the retained blood at once, and at the time of the operation. I would suggest that an opening just large enough to allow of the escape of a very minute quantity of fluid be made at first, and that this opening should be made obliquely in the obstructing membrane, giving it a valvular character. The fluid should be evacuated *guttatim*. If the opening become closed, a second and similar opening to be made the following day, or two or three days later, and a firm but gentle support given to the abdomen by the aid of a bandage during the whole period of evacuation of the fluid. The patient to be kept in a state of absolute rest. The aperture in the hymen should not be

increased in size until the uterus has returned to its proper dimensions, the object being, at first, simply to allow the fluid to escape in the most gradual manner possible. If, by any chance, air enter, and the fluid become decomposed, it would be safer at once to make a free opening. It is questionable whether the practice of injecting water into the uterus after an operation of this kind be safe. Bernutz recommends that in evacuating the fluid a period be chosen for the operation eight or ten days after a menstrual period, and that a small trochar be used. He considers pressure over the abdomen objectionable. In the latter particular the method recommended by myself differs from that of Bernutz. In other respects the principle of the two methods is identical, in both the necessity for slow evacuation of the fluid being recognised.

ABSENCE OF THE VAGINA.

There are two classes of cases to be dealt with:—1. Those in which the absence of the vagina is accompanied with signs of menstrual retention; and 2. Those in which no signs of menstrual retention are present. This division is a practical one, for in the first class of cases operative measures are generally called for, while in the second this is not usually, or at all events necessarily, the case.

1. *Absence of Vagina with Menstrual Retention.*—Here menstruation is not possible, there being no communication between the vulva and the uterus. Absence of such a communication is sometimes associated with defective development of the uterus; and in such cases, even if a communication existed, menstruation would not for that reason occur; but in other instances, although the vagina is wanting, the uterus is well developed, and menstrual blood is poured into its cavity at each menstrual period. The distension of the uterus may be very considerable, the sufferings of the patient gradually increasing in intensity, chlorosis and other signs of grave constitutional disorders being present. The only treatment capable of affording relief is a mechanical one. The difficulties encountered in affording such relief vary in different cases, but are always very much greater than in the case of imperforate hymen with retention. And not only are the difficulties greater, but the danger from an operation is more considerable. The case operated on by Amussat* will probably always be quoted at once to illustrate the difficulties of an attempt to make a vaginal

canal, and to point out how these difficulties may best be overcome. The case was that of a girl, aged 15½ years, in whom the vagina was absent, and who had suffered from symptoms of menstrual retention since the age of 13. There was a tumour above the pelvis, the size of the uterus at six months' gestation. The tumour was felt from the rectum; the urethra was the only opening at the vulva, and a sound passed into it could be felt from the rectum through a very thin partition ('à travers des parties très minces.') The diagnosis was evident. Thereupon Amussat, after stretching the vulva, pushed the handle of a sound upwards beneath the urethra, and then, using the little finger in a similar manner, sought to make a passage towards the fluctuating pelvic tumour, in the direction of the vagina. By drawing the perinæum downwards and at the same time pushing the finger inwards, a sort of separation was effected. Sponge was now inserted to maintain the dilatation, and three days later, this combined tearing and dilatation process was resorted to anew. After two further attempts, on the two following days respectively, the tumour was finally arrived at. The dilatation was kept up by means of sponge. On the tenth day after the first operative procedure, the tumour was punctured, first by a trochar, and next by a bistoury, and the menstrual fluid, so long retained in the uterus, allowed to escape. The tumour was, at the time of the operation, two inches from the vulva. The opening into the uterus was enlarged, and a canula inserted. Inflammation of the left Fallopian tube resulted, clots were expelled from the rectum. Four times after this the patient suffered from menstrual retention, but a cure was finally obtained, and she was restored to such perfect health that two years later the question of the propriety of marriage was seriously discussed.

Amussat rejected the use of the knife from the obvious difficulty of avoiding the bladder on one side, and the rectum on the other. The chief difficulty in following Amussat's plan is the tediousness of the procedure, and the objection on the part of the patient to its continuance. In a case related by Bernutz* the operative procedure was interrupted for this reason, when, as it appeared from what took place subsequently, the tumour of the uterus was on the point of being reached. In a case very much resembling that of Amussat's, my friend Dr. Braxton Hicks was prevented completing what promised to be a very successful operation for the formation of a vagina, in a similar way.†

* *Loc. cit.* p. 307.

† *Obst. Trans.* vol. iv. p. 232.

Another method of treatment which has been adopted in cases of this kind, is to puncture the uterus from the rectum. It is obvious that this procedure is open to the serious objection that the passage made for the escape of the menstrual blood is not in the natural position, while the evacuation of the fluid is also less under the operator's control. It appears that in some cases, however, the septum between the urethra and rectum is so thin as not to admit of the attempt to form a passage to the retained fluid in that position.

If formation of a vagina be really impossible, this tapping of the uterus from the rectum is the only alternative. For the performance of the operation a curved trochar is necessary, and great care must be exercised so as to avoid injuring the bladder. The observations as to the manner in which the fluid should be allowed to escape from the uterus, which have been made in relation to imperforate hymen, here apply with still greater force. The evacuation of the fluid must be made very slowly, the recumbent posture must be maintained, and opiates will be probably required.

An interesting case was related to the Obstetrical Society by Mr. Baker Brown, in which there was vaginal atresia with menstrual retention of two years' duration, the uterus as large as at four months of gestation. The uterus was tapped as above, the trochar left in for a fortnight. A month later the patient menstruated per rectum.* In two cases, very similar to the one related by Mr. Brown, Dr. Braxton Hicks performed the same operation,† and evacuated the contents of the uterus successfully. Dr. Hicks considers that the canula should not be left in the opening thus made for longer than ten or twelve hours; to avoid the introduction of air, he recommends that the canula be plugged just before the complete evacuation of the uterine contents.

2. *Absence of Vagina without Menstrual Retention.*—The point has hardly been raised as to whether, in such cases, operative measures are called for. If the uterus be present, if the patient be healthy and well-formed, and further, if menstrual molimina have been present—even although there may be no evidence of menstrual retention—under these circumstances, the attempt to make an artificial vagina could not be said to be absolutely unjustifiable. Until the uterus had been reached, it could not be said that menstruation, and consequently pregnancy, was quite out of

* *Obst. Trans.* vol. iv. p. 21.

† *Ibid.* p. 228.

the question. In making these remarks, I have in my mind a case respecting which I was consulted some time since, and in which I have reason to think that the formation of a vagina would be attended with advantage.

STRICTURE OF THE VAGINA.

The stricture of the vagina, resulting from the contraction following mechanical injuries received during parturition, is often very difficult to remedy. The two methods of cure are by incision and subsequent dilatation, or by dilatation alone; and which of the two courses is preferable will be determined by a consideration of the nature of the case. Where the stricture is very firm, and at the same time limited in extent, an incision by a blunt-pointed bistoury at once restores the canal to its natural size, the opening being maintained by careful plugging of the vagina with oiled lint. The plugging must be persisted in for some days. In other cases, where the stricture affects a greater extent of surface, cutting may be less necessary, and the gradual dilatation by bougies may be preferable. Dr. Braxton Hicks* has related some interesting cases of acquired stricture of the vagina. The plan pursued by Dr. Hicks in treating the cases in question, and which proved very successful, was a combination of cutting and dilatation. Any tight bands encountered as the process of dilatation is being effected, should be just touched with the edge of the knife to facilitate the dilatation. In cases where labour supervenes in these cases of stricture of the vagina, the foetal head forms a very efficient dilating body, but the dilatation often requires to be assisted by the careful use of the knife. Much time and patience will be necessary in some cases to restore the canal to its proper condition, owing to the great tendency of the cicatricial tissue to contract after being divided. Where cutting operations are performed, great attention to cleanliness is essential.

In cases where the stricture is congenital, there being, however, a minute opening, allowing of menstruation, but rendering intercourse difficult, the existing opening is to be sought for by means of the speculum, and enlarged by the knife, the canal being subsequently plugged with lint, to prevent adhesion of the cut surfaces.

* *Obst. Trans.* vol. iv. *loc. cit.*

SIMPLE NARROWNESS OF THE VAGINA.

This condition, which is one not very rarely coming under notice, will be best treated by careful employment of bougies, gradually increased in size until the canal is sufficiently large to admit of intercourse. Parturition is the great cure for this condition, and it is remarkable how easily an apparently very narrow vagina gives way, so as to allow of the passage of the large head of the foetus. Once fully dilated in this manner, the cure is complete.

SPASM OF THE VAGINA—VAGINISMUS.

In the treatment of this affection, the first object in view should be to remove its cause. The affection is sometimes of local origin, and at other times probably of a constitutional nature; these two classes of cases necessarily require each a different kind of treatment. The condition of the vulva, of the vagina, and of the uterus, must be severally explored, and any disorder discovered rectified. Dr. Simpson has in some instances found true small nodular neuromata occurring under the mucous membrane, such as are found subcutaneously in other parts of the body.* Presence of these neuromata would probably give rise to symptoms of vaginismus, and their removal by means of the knife would be indicated.

If the chief difficulty present consists in the impediment offered by the spasm to sexual intercourse, and general treatment is ineffectual in remedying the inconvenience, there are three courses open to us—either to dilate the vaginal canal gradually, by appropriate instruments, and so to accustom the parts to the contact of a foreign body, or to incise the muscles of the sphincter on each side, and afterwards to use bougies to keep up the dilatation, or to cut across the pudic nerve. The course recommended to be pursued by Marion Sims,† Debout,‡ and Michon,§ does not essentially differ. It consists in cutting through the vaginal sphincter on each side, near the commissure of the vulva, the incision going deeply enough to pass through the muscular fibres. After the incisions have been made, a glass (Marion Sims) or caoutchouc (Debout) dilator is to be used, to prevent the opposed edges of the incisions from uniting. It may be expected that rather copious bleeding will occasionally follow the incisions in

* *Med. Times and Gaz.* 1859, vol. i. p. 336.

† *Obstetrical Transactions*, vol. vi.

‡ *Bull. de Théor.* 1861, vol. ii.

§ *Ibid.*

question, in checking which, pressure and cold applications would be the means relied on. Subsequently, the glass or caoutchouc dilator, gradually increased in size, to be worn for a time, until the parts are sufficiently dilated. When the incision treatment is dispensed with, the use of bougies, gradually increased in size, may be had recourse to. Dr. Simpson has treated the affection by subcutaneous incision of the pudic nerve by means of a tenotomy knife. This operation of cutting the pudic nerve was first practised by Burns.

The cases in which the affection actually interferes with sexual intercourse are undoubtedly extreme cases. There are others in which the spasmodic element is less marked; there being extreme sensitiveness. These cases are best treated by the use of opiate enemata: Scanzoni speaks favourably of opium and belladonna so used. In all cases, whether we consider the local measures above alluded to as necessary or not as adjuncts, the general treatment is a matter of great moment. Regular, temperate living, exercise in the open air—especially horse exercise—use of the sponge-bath, friction of the skin, cultivation of the bodily rather than of the mental powers, these measures are not subsidiary, but of primary importance in the treatment, and the patient cannot be fully restored to health if these simple precautions be neglected. And in some cases it is probable that the best treatment will be to regulate carefully some disordered mental condition.

VESICO-VAGINAL FISTULA.

There is no department of surgery in which such marked improvement has been made of late years, as in the treatment of this very distressing condition. Cases of vesico-vaginal fistula are now, almost without exception, capable of cure. To Dr. Marion Sims, of New York, is due the merit of introducing a method of operating which hardly ever fails, viz. the use of metallic sutures instead of sutures of thread or silk, which were formerly used, for the purpose of bringing the edges of the wound together, and of an improved speculum, by which latter instrument access is better obtained to the part involved, and the manipulations thus greatly facilitated. The fact that Mr. Gossett, of London, in 1834, published a case illustrative of the advantages of metallic sutures, does not invalidate this statement, as the latter author's practice never attracted attention, or led to its adoption by other individuals. Since Dr. Marion Sims introduced the use of the 'silver suture,' other modifications of the operation, the use of clamps, buttons,

bars, &c., as assisting in holding the edges of the wound together, have been adopted, but latterly they have been found superfluous, and it appears that the really important part of the improved operation is the greater nicety with which the edges of the fistulous opening can now be pared, and the newly-cut surfaces kept in close apposition.

The operation, as now practised by several distinguished physicians and surgeons, is essentially the same, particular points being more insisted on by some than by others. The latest writers on the subject, in addition to Dr. Marion Sims, are Mr. Baker Brown,* Mr. Spencer Wells,† Mr. James Lane,‡ and Dr. Matthews Duncan,§ and these operators each recommend an operation essentially the same. The patient is to be prepared for the operation by suitable diet and regimen, for a day or two, or longer, as may be deemed necessary, and before the operation the bowels must be thoroughly evacuated. For the operation itself, the patient is placed on the back, as in the operation of lithotomy (Brown, Wells), on the side, with the body partially pronated (Sims), or on the hands and knees. The two former methods allow of chloroform being easily given, the latter method is the best in difficult cases. The fistula is exposed by simply separating the labia by the fingers, and retracting the perinæum by Sims's duck-bill speculum. The edges of the fistula are next pared by knives adapted for the purpose. Mr. Brown uses two—one for the right, one for the left hand. Further, the knives used are generally bent, the blade joining the handle at an angle. Importance is attached by Mr. Wells and others to the manner in which the paring is effected, it being recommended that the edges be bevelled, the operator removing thus the mucous coat of the vagina and the muscular tissue of the bladder, but not the mucous lining of the bladder. The effect of this is, that the amount of raw surface offered for adhesion when the lips are brought together, is increased. Every part of the border of the fistula must be pared. The paring effected, a series of silk interrupted sutures are introduced; they pass from a quarter of an inch outside the edge of the wound, through the thickness of the muscular coat of the bladder, close to the edge of the cut surface, stopping just short of the mucous membrane; the same on each side. Avoidance of the mucous coat of the bladder is a point insisted on by all. The number

* *Lancet*, 1861, vol. ii. p. 494.

† *Lancet*, Jan. 12, 1861, p. 37.

‡ *Brit. Med. Journ.* Aug. and Sept. 1861.

§ *Ed. Med. Journ.* Dec. 1861.

of the sutures varies according to the size of the opening, but it is a point much insisted on by Dr. Marion Sims, that they should be numerous, and close together. After the silk sutures have been all introduced, the ends, which are now hanging free, are used to draw through the silver-wire permanent sutures, or the wire sutures are sometimes inserted at first, the needle employed in the latter case being a perforated one, through which the wire travels. The edges of the wound are then carefully brought together by tightening the sutures one after the other; the ends of the wire sutures are then twisted up close to the edge by the fingers or by forceps, and the wire is then cut off close to the edge of the wound.

In the performance of the operation, care is required to avoid the ureters. I have heard of more than one case in which unfortunate results have happened from the tubes in question being implicated in the operation; and when the fistula is situated high up, great care and an intimate acquaintance, on the part of the operator, with the anatomy of the parts are essential.

The after treatment requires special attention. The patient is placed on the side in bed, where she must remain for some days. Every effort is to be made to prevent accumulation of urine in the bladder, and this is effected by keeping a catheter in the bladder through which the urine escapes, as fast as it enters this cavity, into an india-rubber bag placed outside; or still better, by an india-rubber pipe, to a suitable receptacle beneath. The catheter used is of a sigmoid form, and of flexible metal, which is self-retaining, or a male elastic catheter may be employed. Mr. Wells urges the necessity of the apparatus being examined every quarter of an hour, to see that no obstruction arises. The catheter should be changed night and morning, and cleaned carefully before re-introduction. The bowels are prevented from acting for a period of ten days or a fortnight, small doses of opium being given periodically for this purpose. The sutures are removed about the tenth day. In removing the sutures, each separate stitch is slightly retracted by the forceps, and then cut across on one side by means of sharp scissors.

The instruments necessary for the operation are of a special kind. Mr. Hilliard, of Glasgow, has made important improvements in some of these.* The needles used in introducing the sutures require to be made with different curves, to be used in different positions of the fistula. Mr. Brown uses a set of fourteen needles.

* *Med. Times and Gaz.*, Nov. 1860, p. 498.

If the fistulous communication between the bladder and vagina be due to cancerous ulceration, or to syphilitic ulceration still progressing, operative measures are quite inapplicable.

RECTO-VAGINAL FISTULA.

These cases do not, as a rule, present the same difficulty in regard to treatment as cases of vesico-vaginal fistula: they are capable of being treated on precisely identical principles. The application of caustic is frequently sufficient to produce closure of the aperture. Mr. Brown recommends in some cases the laying open of the bowel from the fistula to the anus, with the view of healing it from the bottom. Careful paring of the edges, and use of metallic sutures, can be had recourse to, if other more simple measures fail. The treatment after the operation chiefly consists in keeping the bowels confined, by means of opium, for some days. Fistulas due to cancerous ulcerations are not remediable by operation.

VAGINITIS.

In cases where there is much heat, tenderness, and congestion of the vagina, leeches may be advantageously applied round the lips of the vulva; fomentations, by means of flannels wrung out of hot water or decoction of poppies, may be usefully employed after the bleeding, as a substitute for it in some instances. Hip-baths and injections of tepid or of quite cold water will be necessary, a stream of water being applied by the self-acting douche apparatus, described at p. 464. Other local applications may be required where the disease has assumed a chronic obstinate form. Scanzoni speaks highly of the employment of a cotton tampon, the surface of which is sprinkled with powdered alum, this being inserted in the vagina for a few hours every two or three days: the alum to be diluted with powdered sugar, if the sensibility be considerable. Solution of nitrate of silver of varying strengths, according to circumstances, or the solid stick of caustic, may be also necessary. The general treatment is quite as important in the management of such cases as the local one. Rest, abstinence from intercourse, the horizontal posture, gentle aperients, food in moderate quantity, absence of excitement—all these are essential to the cure of the affection. When the patient has recovered, the principal cause which brought about the attack must be for the future avoided (see ‘General Treatment of Leucorrhœa,’ p. 461). The vaginitis associated with gonorrhœa requires a peculiar treatment. In the treatment of all

cases of vaginitis, whatever be the cause, very great importance is to be attached to the observance of cleanliness ; frequent ablutions should be employed.

TUMOURS GROWING IN OR FROM THE VAGINAL WALLS.

The fibrous tumours growing in the vaginal wall, or hanging by a pedicle from any part of the same, are only amenable to surgical treatment. They interfere with coition, and require removal. The polypoid tumours are best removed by the *écraseur*. If near the bladder, care should be taken not to wound this viscus in removing the tumour. A more careful operation by the knife is required when it is decided to remove a tumour which is larger, and has a wider basis of attachment. Some cases of these rare forms of tumour are related in Dr. M'Clintock's work.

The cystic tumours of the vagina, if pedunculated, are treated by excision. When this is not the case, the cyst may be tapped and injected, or the cyst may be dissected from its attachments, if not of considerable size. The latter plan is, on the whole, the best, as the cyst may refill subsequently, when simply tapped.

In the treatment of cancerous tumours of the vagina, the same rules are applicable as in cases of cancer of the uterus. (See Chap. XI.)

CHAPTER IX.

TREATMENT OF INFLAMMATION OF THE UTERUS.

ACUTE INFLAMMATION OF THE UTERUS.

CHRONIC INFLAMMATION OF THE UTERUS.—General Treatment.—Treatment of the Affection according as it is of Local or Constitutional Origin—Preventive Treatment; Relation to Parturition and Menstruation; the 'Irritable Uterus'—Internal Remedies—Mineral Waters—Application of Remedies to the Interior of the Uterus. CHRONIC INFLAMMATION OF THE OS AND CERVIX UTERI.—Application of cold Affusions, the Douche, &c.; Leeches and Scarifications; Caustics, milder and stronger; the Actual Caутery.

ACUTE INFLAMMATION OF THE UTERUS.

ACUTE inflammation of the uterus very rarely comes under the notice of the practitioner, although acute inflammation and formation of abscess in the tissues immediately adjacent to the uterus, are not by any means unfrequently observed. It has been chiefly noticed as an effect of injuries, e. g. in the act of intercourse, as a result of sudden suppression of the catamenia, and as a consequence of gonorrhœal infection; and it may occur after parturition.

The treatment required in cases of acute inflammation of the uterus will vary according to circumstances, but certain general rules apply to all cases. The patient must be kept in a state of absolute repose, and in the horizontal position. Depletion, by means of leeches over the hypogastric region, to the inside of the thighs, or to the os uteri, or by cupping in the lumbar region, will be required, and in some cases venesection may be advisable, at the onset of the disease. Warm poultices, warm injections into the vagina, and opiates, would be necessary; the diet should be at first non-stimulating. In cases where inflammation has gone on to the formation of abscess, a different system of treatment is required, and measures of a fortifying character will be imperatively necessary. (See 'Treatment of Pelvic Abscess.')

CHRONIC INFLAMMATION OF THE UTERUS.

It has been already stated (p. 303) that the term 'chronic inflammation,' as applied to affections of the uterus, has a meaning not quite identical with that which it possesses when applied to affections of other organs, and that it must be understood to imply the presence of a condition which gives rise to a great variety of symptoms, and to effects which are not identical in kind or degree in different cases.

Patients labouring under chronic inflammation of the uterus suffer from leucorrhœa, menorrhagia, pain of various kinds and degrees, and disturbances of the functions of the other pelvic viscera; while not rarely there are witnessed further effects in disturbances of the functions of organs more remotely situated; finally, grave constitutional symptoms not unfrequently arise from the presence of long-continued uterine disease, of the kind now under consideration.

In previous chapters, the treatment of several affections arising from, or associated with, chronic inflammation of the uterus—leucorrhœa, profuse menstruation, &c.—has been described, but the object of primary importance is obviously to remove the morbid condition underlying these symptoms, and how that is best to be effected it is now our object to determine.

There are two classes into which all cases of chronic inflammation of the uterus may, for therapeutical purposes, be divided, viz. 1. Cases in which the affection is of local origin; 2. Those in which it is of constitutional origin. The treatment is preventive and curative.

The exercise of the various functions the uterus is called upon to perform, is connected in a vast number of instances with the production of chronic inflammation. One of the most important of these is *parturition* and its effects. Defective involution of the uterus after delivery is a condition which frequently leads to troublesome chronic uterine disease, and it is of the utmost importance, in cases where there is a tendency to the affection, to take steps to insure contraction of the uterus after child-birth. The patient should maintain the horizontal posture for some days, and should not be allowed to perform movements calculated to strain the abdominal muscles. And as soon as possible after the lochia have ceased, the use of the hip-bath, or of the vaginal douche (see p. 464), should be commenced. Great care should be taken to prevent constipation of the bowels; the diet should

be nourishing, exercise should be taken in moderation, at first; walking is to be prohibited. The treatment should be persisted in for some weeks after the labour. It is usually advisable to apply a moderate support to the abdomen by means of an elastic bandage. Very great benefit will be derived from attending to these simple rules, and it is very certain that a neglect of them has frequently the result of perpetuating a troublesome and painful disease. It is important, as a further means of inducing perfect contraction of the uterus after delivery, to induce the patient to suckle her child. In women who are liable to abortions, it is necessary to take double precautions; we frequently find that the uterus becomes diseased from the fact that the pregnancies rapidly succeed each other, the uterus not having recovered its natural size when it becomes again occupied by an ovum. In such cases, unless care be exercised, the liability to abortion is perpetuated. We must insist on the necessity for allowing the uterus a period of rest, which is equally necessary after an abortion, and after an ordinary labour; in many cases, the habit of abortion is only to be broken through by enforcing a separation of the husband and wife for some months, during which time efforts are to be made to reduce the uterus to its normal size and to its natural condition. There can be no doubt that by judiciously watching over and supervising the function of parturition, and regulating the conduct of the patient afterwards, we can effect much good in cases where the uterus is in a state of chronic inflammation.

Menstruation and its disorders play an important part in giving rise to chronic inflammation of the uterus. Menstruation involves presence of congestion and enlargement of the whole organ, and when the menstrual fulness and enlargement of the uterus are prolonged over the normal period, or when the menstrual periods follow each other too quickly, the uterus falls gradually into a state of disease; the organ never thoroughly recovers its non-menstrual condition, its tissues are habitually in a lax, atonic condition; and, after this state of things has existed for some little time, the whole organ becomes somewhat increased in size. These considerations sufficiently indicate the great importance of regulating the performance of the menstrual function in women who are the subjects of chronic uterine inflammation. The precautions to be taken with this end in view have been particularly enlarged upon already (see p. 473).

The next element in the preventive treatment, as it may be termed, of chronic inflammation of the uterus, is the removal of

conditions, partly local and partly constitutional, tending to produce congestion of the abdominal, and especially of the pelvic viscera; there can be no doubt that the uterus is very prejudicially affected by the presence of vascular fulness of the other abdominal viscera. Mechanically, also, an overloaded state of the abdominal viscera, consequent on disorder of the digestive apparatus, tends to give rise to, or at all events to perpetuate, chronic fulness of the uterine vessels; and thus the removal of abdominal congestion, and the cure of disorders of the digestive organs, are often essential to the cure of chronic inflammation of the uterus.

In the class of cases next to be considered, the *constitutional* element in the causation of the disease is of extreme importance in reference to the question of treatment. In a vast number of patients affected with chronic uterine disease, the starting-point of the mischief is clearly disorder of the general health; and, although the uterine symptoms cannot be neglected, the primary object is to restore the body to a healthy state. The importance of keeping this fact in view has been sedulously and frequently insisted on in previous pages of this work; in the treatment of the particular class of cases now before us, its importance cannot be over-estimated. The constitutional disorder, and its exciting cause, must, in the first place, be removed (see pp. 51, 89), after which, or in association with which, attention will be advantageously directed to the local treatment of the uterine disease. In these cases, also, a systematic supervision of the functional actions of the uterus (see above, p. 515) must be carefully carried out.

There is a class of cases of great interest practically, respecting which it is frequently difficult to say whether the constitutional or the local disorder requires most attention from a therapeutic point of view. They are the obstinate and troublesome cases of chronic uterine inflammation described by Gooch under the term 'irritable uterus.' The symptoms observed in cases where this affection is present, have been already described (see pp. 140, 259). In these cases we usually find functional disorders of the uterus, in association with evident constitutional tendency to rheumatism or neuralgia. The difficulty experienced in the treatment arises from the fact that the system of treatment which suits one part of the disease is frequently prejudicial as regards the other; rest and observance of the horizontal posture relieve the pain, but from want of exercise the general health suffers, and the constitutional element in the affection is unrelieved. Again, the attempt to restrict the functional activity of the uterus—as by prohibiting

intercourse and thus preventing impregnation—does not always produce a corresponding amount of benefit, and inconveniences of other kinds then result. The presence of an hysterical element in these cases of irritable uterus is not unfrequently observed, and it renders the management of the case still more troublesome.

The remedies which Dr. Gooch * found most invariably useful were, the horizontal posture, small local blood-lettings, and narcotics. It would appear that blood-letting is rarely likely to be serviceable, and, indeed, Dr. Gooch himself states that when the disease has lasted long, and the body is enfeebled and emaciated, the relief thus afforded is temporary, and the debility occasioned by it so great that it must be relinquished. Rest is undoubtedly absolutely necessary—the *functional* rest previously alluded to, particularly so—and narcotics are essential. (For remarks on the use and on the choice of narcotics and sedatives, see p. 470.) The long-continued administration of opiates in large doses is, perhaps, the worst form of treatment that could be devised; Gooch found that the patients who remained longest uncured were those who had gradually accustomed themselves to a daily enormous allowance of opium. Another remedy Gooch was in the habit of employing, was a mild course of mercury, and this was found advantageous in cases where the health was not much reduced; but it was found necessary to discontinue it in other cases attended with debility and emaciation. The remedy is not, I believe, applicable, except in a very few cases; and in those patients who are of an hysterical tendency, mercury in any form has appeared, in the cases which have come under my own observation, to be quite inadmissible. The element in the case, which requires particular though by no means exclusive attention, is the constitutional tendency to rheumatism or neuralgia. Having regard to the removal and prevention of rheumatism or neuralgia, it is necessary to take particular care that the skin be well covered, to clothe the patient from head to foot in warm flannel, to avoid damp, and especially damp in association with cold, and to maintain the action of the skin by frictions, by the use of baths, or other suitable means. Of the value of attention to these rules, I can, from personal experience, speak very strongly. In chronic cases we should expect most benefit from the employment of those mineral waters which are found most serviceable in cases of chronic rheumatism of other parts of the body. A course of baths

* See the New Sydenham Society's edition of Gooch's Writings, p. 160.

such as are to be obtained at Wildbad, Schlangenbad, Buxton, and some other watering-places, is to be recommended. The ascending hot douche of Ems, the water of which has a temperature of 89° , and which contains carbonic acid, bicarbonate of soda, and chloride of sodium as chief constituents, has a wide reputation in the case of chronic metritis, and would seem particularly suited for chronic obstinate cases of irritable uterus, in which pain is the most troublesome symptom. Guaiacum has been found very useful in these cases, especially where there is an undue quantity of discharge present. Colchicum is, as a rule, not very well borne by patients suffering from this disease. Benefit will frequently be derived from the administration of bark, of quinine, of arsenic, which remedies are, as is well known, very efficacious in the treatment of neuralgia, both periodic and non-periodic in character; but none of these remedies are specifics.

As remarked by Gooch, patients the subjects of this affection are very liable to relapses; they weary of the constant care and attention necessary in carrying out the treatment, and when, apparently, on the high road to recovery, some indiscretion, or unusual exertion, brings back the symptoms in their former intensity.

The foregoing observations refer for the most part to what may be termed the *preventive* treatment of chronic uterine inflammation. The *curative* treatment consists in the application of local remedies to that portion of the uterus which is accessible, viz. the os and cervix uteri, and the exhibition of internal remedies.

Internal Remedies.—A mild mercurial course, consisting in the exhibition of minute doses of the bichloride of mercury, has been recommended by Dr. Oldham for the purpose of reducing the size of a uterus enlarged by chronic inflammation; it is a remedy which has been found very useful by several practitioners, and I have myself employed it with advantage. If the patient be of weakly habit, and if there be any ‘constitutional’ debility present, it is not to be recommended, and I have before remarked on the fact that, in ‘hysterical’ cases, mercury does not seem to suit. The dose should be so small as not to affect the gums, and the treatment requires to be persevered in for a considerable time.

Iodine and bromine appear to have an indirect effect, when taken internally for some little time, in reducing the activity and intensity of the uterine functions, and they have been found of great service in long-standing cases of chronic enlargement and congestion of the uterus. The action of these remedies is apparently of an indirect nature, and they have been found of most service

when taken internally, at the same time that the patient is using baths or injections containing iodine or bromine in solution.

The treatment of chronic uterine disease, of the kind now under consideration, by means of *mineral waters*, requires a distinct notice. In obstinate cases, the greatest benefit is sometimes derived from the internal and external use of mineral waters of various kinds; the effects produced being dependent, partly on the change of scene and occupation, partly on the increased activity of the skin induced by the use of the baths, and partly on some special action of the waters used. The choice of a watering-place is a matter of some moment. In cases of chronic uterine inflammation, complicated with dyspepsia and with defective action of the abdominal circulation, Vichy may be recommended. Where the action of the abdominal viscera is sluggish, and where there is great constipation, the baths of Carlsbad or Marienbad are very useful, especially in the case of patients who have been in the habit of indulging too much in the pleasures of the table. Many others might be mentioned, equally efficacious in improving the condition of the abdominal circulation and the state of the digestive organs, such as the waters of Püllna, Sedlitz, Purton, &c., which contain sulphate of magnesia and soda, and are therefore of an aperient character. In cases where we desire to act chiefly on the skin, and to effect a derivation to the surface, the 'indifferent' thermal waters offer advantages; the waters of Wildbad, Schlangenbad, Gastein, Clifton, Buxton, &c., deserve mention in this respect. Warm sea-water baths act in like manner. Hysterical cases are most likely to be benefited by the 'indifferent' thermal baths, for these patients frequently bear neither the lowering effects produced by waters of an aperient character, nor the action of the chalybeate waters, next to be mentioned. In the very large majority of cases of chronic inflammation of the uterus, the element 'debility' has to be dealt with. There are cases in which the uterus and pelvic organs generally appear to be in an atonic relaxed state, and for the relief of this class of patients chalybeates are found most serviceable. The waters of Schwalbach, Pyrmont, Spa, Driburg, Kissingen, Franzensbad, and Fachingen, are the best adapted for patients suffering from the above symptoms, associated as they usually are with anæmia, pallidity of the surface, tendency to head-aches, &c. The iodo-bromated waters of Kreuznach, Hall, Durkheim, and Krankenheil, have a special action in cases of inflammation of the uterus of the more chronic kind, as already remarked. For neuralgic or rheumatic cases, Wiesbaden, Baden-Baden, Ems, and Bath enjoy deserved repute (see also p. 519). In

cases where it is considered desirable to administer iron in small quantities, together with an aperient, waters such as those of Kissingen or Selters are the best. The baths of Driburg have been found peculiarly efficacious, taken during pregnancy, in cases where there is a tendency to disease of the fœtus; the waters in question are chalybeate, but contain also lime in solution.

For further information on the subject of baths, Dr. Althaus' recent work may be consulted.*

The *local* treatment of chronic uterine inflammation will be fully considered in connection with that of chronic inflammation of the os and cervix uteri. Here it is necessary, however, to say a few words respecting the

Application of Remedies to the Interior of the Uterus.—It is believed by some pathologists, that the lining membrane of the uterus is the part to which remedies may be most advantageously applied in cases of uterine inflammation, and that the affection would be more properly termed 'endo-metritis.' In this country, the endo-metritic view of the question has been chiefly advocated by Dr. Tilt and Dr. Routh. In certain cases of chronic menorrhagia, the os and cervix uteri having been dilated and the cavity of the uterus exposed, there has been observed a fungous condition of the lining membrane. This fungous condition is considered by Dr. Tilt and Dr. Routh an evidence of endo-metritis. The treatment which has been recommended in these cases, and which is had recourse to by the authors in question, is artificial removal of the fungosities by means of a curette—a spoon-like instrument, with a cutting edge—in addition to which Dr. Routh applies tincture of iodine or other substances to the lining of the uterus.

This treatment has been practised also by some continental practitioners. For the arguments in favour of this mode of practice I would refer to the writings of Dr. Tilt† and Dr. Routh‡ on the subject. The cases of menorrhagia must be exceedingly few which are incapable of being treated satisfactorily by other and more simple measures. So far as we know, in the more ordinary cases of menorrhagia, there is no particular alteration of the lining membrane of the uterus (see 'Treatment of Profuse Menstruation'). Distinct polypoidal growths from the interior of the uterus, and which have been found to cause repeated hæmorrhages, fall under a totally distinct category. (See 'Polypi of the Uterus').

* *The Spas of Europe.* Trübner, 1862.

† *On Ovarian and Uterine Inflammation*, 2nd ed.

‡ *Obstetrical Transactions*, vol. iii.

There are cases, already referred to, in which there is observed thickening and hypertrophy of the menstrual decidua, the patient frequently expelling what appears to be a cast of the uterine cavity. These appear to be cases of endo-metritis. Whether topical applications, caustics, &c., may have a good effect in curing this very troublesome affection, remains to be seen; on the whole, I believe that the best treatment of disordered conditions of the mucous membrane of the uterus, consists in application of those remedies having an action on the whole organ, and which have been already described, and that when local treatment is necessary, it may be, unless in some very rare and exceptional cases, limited to the application of remedies to the os and cervix uteri—douches, lotions, caustics, &c., as will be more particularly enumerated farther on.

CHRONIC INFLAMMATION, CONGESTION, &C., OF THE OS AND CERVIX UTERI.

This is one of the most common pathological conditions coming before us, and it is generally associated either with long-continued pain and suffering, chronic obstinate leucorrhœal discharges, enlargement of the vaginal portion of the cervix uteri, an hypertrophied condition of the papillæ of the mucous membrane lining the cervix uteri (so-called ‘ulcerations’), excoriations, or ulcerations of the surface of the vaginal portion of the cervix, &c.

In many cases the affection is primary, but in a still larger number of cases it is a secondary evil. In many cases it yields to a treatment conducted on the general principles which have been already laid down; and in *all* cases, even when we adopt local measures and appliances, it is essential that we employ also general measures of the kind alluded to. What these general measures should be, will depend greatly upon the nature of the particular case; in some cases, the relief of pain is the prominent indication, or menstruation is too profuse, or there is leucorrhœa, or the patient is suffering from debility, with indigestion, hysterical symptoms, &c. One important object is to remove the local congestion, an object which will be accomplished by derivation to the surface, that is to say, by the employment of baths, frictions, exercise, and careful hygiene, by rest, both bodily and mental, by attention to the state of the digestive organs, and by remedying any defect in the general condition of the patient. The treatment directed to be employed in cases of chronic menorrhagia or leucorrhœa, is here applicable, for one or other of these symptoms is rarely absent.

Such are the general principles to be kept in view. But where the patient has been ill for some time, the case having become a chronic one, local treatment may be required, and the cure will be expedited by adoption of such local treatment.

Application of Cold Affusions.—First and most important in the list of local remedies, is the frequent application of cold or tepid water, by means of injections, to the cervix uteri. The manner of employing such injections has been already described. To produce a curative effect, injections must be persevered in for a considerable time, and care taken to insure their efficient administration. The continuous and repeated irrigation of the cervix brings about an improvement in a variety of ways. The bulk of the uterus itself becomes diminished, the congestion is removed, the secretion of the glands of the cervix is lessened. In cases where the vaginal portion of the cervix has attained a considerable size, owing to a long continuance of the diseased condition, and to a morbid rapidity of growth of the structures of the cervix, the best effects follow from the assiduous application of cold, in the manner here alluded to, although this treatment alone, as might be expected, fails in completely curing the disease in long-standing cases. This degree of improvement will not, of course, be witnessed where the enlargement depends on development of fibrous or other tumours in the cervix uteri.

The next local remedy to be spoken of, is depletion by *leeches* or *scarification*. Where there is any degree of tenderness present, where there is vivid redness of the os cervix, or where it is considered for other reasons desirable to remove a certain quantity of blood, leeches are sometimes found useful. Simple redness and injection of the vessels of the part do not necessarily indicate depletion, nor does profuse discharge; depletion is most likely to be called for in cases where the patient is in a generally plethoric condition. And sometimes, in the absence of such plethoric condition, we find depletion useful in cases where other measures have failed. In chronic cases, where there is considerable hypertrophy associated with a congestive condition, good effects may be obtained by leeching the cervix uteri once or twice a week for three or four weeks; employing at the same time injections, or such other local measures as may be deemed advisable.

The decision as to the propriety or not of leeching the cervix uteri will be influenced by the particular view which may be taken of the nature of the affection present.

Respecting the manipulations necessary in applying leeches to

the os uteri, a word or two is required. It has been found in practice to produce unpleasant or inconvenient results when the leeches have attached themselves either within the os uteri, or on the walls of the vagina. A moderate-sized speculum is to be first introduced, so that its upper extremity touches the vaginal portion of the cervix at every point, and a small piece of lint is next inserted in the os itself. The leeches (three or four in number) are then pushed up the tube, and allowed to fix themselves on the exposed portion of the cervix. It may be necessary to use an injection of tepid water previously to applying the leeches, and to remove the discharge covering the surface of the cervix by means of a piece of lint. When the leech attaches itself to the interior of the os, or to the vaginal wall, the patient usually experiences, especially in the former case, sharp pain. To detach the leech under such circumstances, an injection of salt and water is to be used.

Scarifications of the congested uterine cervix, either externally on the surface of the vaginal portion, or internally in the canal of the same, have been recommended by some practitioners. The remedy is applicable to the same class of cases as those requiring leeches. It may be more advantageous or less advantageous than the employment of leeches, according to the nature of the case. Dr. Tyler Smith states that he has found in scarification of the os the best means of reducing the size in cases of hypertrophy of the part.* Where scarifications are employed, care must be exercised in the operation; I have found that a number of slight scarifications are better than two or three deeper ones. Scarification of the cervical canal by means of a bistoury of peculiar shape and construction, is recommended by Huguier, prior to the use of caustic, in cases where there is obstinate chronic discharge, and in which it is desirable to expose the glandular structures of the cervix more directly to the action of the caustic.

Caustics.—The propriety and the non-propriety of the employment of caustics in the treatment of the affections of the os and cervix uteri now under consideration, has been most warmly debated; the employment of the stronger caustics being the point about which there has been most diversity of opinion, in this country at least. A lengthened discussion of these questions will be here unnecessary, after what has been already said (p. 306) respecting the pathological importance of the lesion of the os and cervix uteri, on which, in fact, the whole question turns.

The most common cases are those in which there is considerable congestion of the os and cervix uteri, associated with profuse discharge, generally of a muco-puriform character, and further, with an hypertrophied, vascular condition of the papillæ of the mucous membrane lining the cervix. The surface exposed by the open os uteri may be considerable, and the congested hypertrophied papillæ bleed easily, and present the 'raw' looking, so-called 'ulcerative' surface. Other changes, such as considerable increase in the size of the cervix, &c., may be superadded. Now, having regard to the hypertrophy, &c., of these constituents of the mucous membrane, it is often desirable to apply caustics for the purposes of cure; the amount of the discharge, and much of the suffering of the patient, being, in a certain number of cases, dependent on the pathological alteration in question. The surface to be operated upon having been well exposed by means of the speculum, the secretions adhering to the surface must be removed by means of a piece of lint or cotton wool, held by means of a pair of long speculum forceps, or gently rubbed against the surface of the os uteri, and as much of the interior of the cervix as may be accessible. This preliminary is absolutely essential; it may be further necessary to cleanse the surface by means of a little tepid water.

The surface being made dry and clean, the caustic is to be applied. The solid stick of nitrate of silver, pretty firmly pressed against each portion of the surface in succession, is an effectual means of accomplishing the end in view. If the surface be made previously perfectly clean, one cauterisation in this method will be sufficient, in the majority of cases, to remove, at all events for a time, the hypertrophied condition of the papillæ. The solution of nitrate of silver may be used, in varying strengths, when the solid nitrate is considered too powerful. For cases in which it is considered advisable to apply the solid caustic to the interior of the cervical canal higher up, also, the perforated caustic and holder, invented by Mr. Robert Ellis,* offer a safe means of accomplishing the desired object. In the apparatus in question, a stick of nitrate of silver is used, having a slender perforation in the centre, and through this perforation runs a wire. The use of the wire is to prevent portions of the caustic being broken off and left in the canal.

Stronger Caustics.—It is the opinion of the school of uterine pathologists represented by Dr. Bennet, that for the removal of

* See *Obstetrical Transactions*, vol. iv.

the diseased conditions of the cervix and os uteri, now under consideration, recourse should be had to the stronger caustics, of which the potassa cum calce is the one most strongly recommended. The still stronger caustic potash is occasionally used by Dr. Simpson. To cure obstinate cases of 'inflammation of the cervix, accompanied by ulceration and hypertrophy,' Dr. Bennet advises the adoption of a treatment of which the following is a summary:—

A large conical speculum is to be used to expose the affected surface, and the cervix is to be well isolated by its means; a cylinder of potassa cum calce, the caustic which Dr. Bennet considers most convenient, is then applied to the surface to be operated upon, this surface having been previously wiped; and after the cauterisation a cotton pledget tied to a piece of thread, and dipped in vinegar and water, is to be applied, and allowed to remain as a dressing, on the withdrawal of the speculum: this dressing the patient can herself remove after a few hours. The cylinders of caustic are of three sizes, and are composed of two parts of potash to one of lime, fused in iron moulds. The caustic is allowed to remain in contact with the diseased region for a few seconds, if the object is 'to modify the vitality of an ulcerated or inflamed surface,' but if the intention is to produce a slough, as when the caustic is employed to reduce hypertrophy, it must be kept in contact longer. The eschar falls off in five to ten days. The cicatrisation begins to take place about the twenty-first day. The cauterisation is to be performed only when there is a clear fortnight before the next menstrual period. During the time that elapses between the falling off of the eschar and that at which improvement may be expected, the nitrate of silver must be periodically applied, in substance or in solution, in order to insure the full benefit of the severe cauterisation; the nitrate of silver being used to check the luxuriance of the ulceration. The caustic in question, when applied to the cavity of the neck of the uterus, is not to be left more than a few seconds in contact with the diseased surface, and not to be introduced more than a half or three quarters of an inch within the cavity. The effect of the severe cauterisation is said to be not to produce pain, but great depression. 'I occasionally see patients,' says Dr. Bennet, 'so prostrated by its action, although scarcely in any pain, as to be unable to rise from the bed or sofa for several days.' The limitation as to the use of the caustic within the os is made owing to the fact that he has seen many instances, where, in other hands, 'the os and cervical canal have become contracted to such an extent as

nearly to obliterate them, and to prove a serious obstacle to menstruation,' in cases where the caustic was carried into the cavity, this contraction being, as Dr. Bennet states, due to want of attention and care in watching the patient during the healing process. If the healing of the ulceration, the object of the treatment, be not accomplished before the fortieth day, the strong cauterisation is to be repeated, or the treatment carried on with milder agents.

The application of the caustic as above, Dr. Bennet particularly recommends for the purpose of removing considerable inflammatory hypertrophy of the uterine cervix; the eschar is in such cases made in the centre of the hypertrophied region: 'nature sets up eliminating inflammation in order to throw off the eschar. This inflammation extends, more or less, to the hypertrophied tissues, according to the size of the eschar, and to the nature and extent of the hypertrophy; and, as it gradually subsides, these tissues melt, and are absorbed.' It may be necessary to make the application several times, the application being each time limited to a small space.

Such is an outline of the method of cauterising recommended by Dr. Bennet in the latest edition of his work on 'Inflammation of the Uterus.' The objections which have been advanced to the method of treatment just described, chiefly by Dr. West and Dr. Tyler Smith, have been many and various. It cannot be denied that other methods of treatment are almost always effectual in removing the conditions in which the strong cauterisations are said to be necessary. And duly allowing for the fact, that an extensive practice like Dr. Bennet's must have brought under his notice a large number of *obstinate* cases, yet there have seemed to me to be strong reasons for the belief, that a less stringent method of treatment is applicable more widely than Dr. Bennet would seem to admit. In this belief I am not singular. I have felt it necessary to express my dissent from that particular portion of Dr. Bennet's treatment which has regard to the employment of the stronger caustics. With respect, however, to this author's remarks on general treatment, his observations on the importance of attention to the diet, regimen, &c., I entirely agree. In fact, a very great portion of the success which Dr. Bennet attributes to the local, I should be disposed to set down to his very excellent general treatment, notwithstanding his protest to the contrary. This is the view of the question which has been already strongly expressed by Dr. West. I have been occasionally much struck with the very beneficial influence which *rest* has appeared to exercise in diminishing the

bulk of an enlarged and indurated cervix uteri. If the patient can be prevailed upon to remain quiet for a few weeks, to use daily irrigation of the cervix, hip-baths, frictions of the skin, to abstain from excitement of all sorts—these measures alone will effect very much good. In conjunction with these measures, the milder caustics may be employed, and astringent injections ordered, as in cases of leucorrhœa.

It is not meant here to be inferred that it is dangerous to use strong caustics at all, or that cases do not occur in which they may be useful. One caustic is as easily and as safely used as another, and the same effect may be produced by a very slight application of a powerful caustic, as by a more prolonged application of a weaker one. It is the deep and destructive cauterisation which is here objected to. And, this being premised, there is no reason why the hypertrophied fungous condition of the papillæ of the interior of the cervix should not be as easily and safely treated by a *very slight* application of the potassa cum calce, or by careful application of the acid nitrate of mercury, as by the solid stick of nitrate of silver. There are other cases, too, in which the stronger caustics now spoken of may be employed—those in which the interior of the os presents those excrescences or developments of the mucous membrane known as *mucous polypi*, and those cases also in which the mucous follicles around the os become swelled out and distended, presenting the little round enlargements known as the *Nabothian bodies*. In the application of the stronger caustics, we have an expeditious mode of dealing with the pathological conditions in question. The rare cases in which true *chancre* of the os or cervix uteri is present, come under the same category.

Whenever the strong caustics are used, very great care is necessary to prevent the tissues adjoining to the cervix uteri from being injured. These tissues must be guarded in a suitable manner during the operation, and precautions used to prevent the caustic applied to the surface of the cervix from coming into contact with the opposed surfaces of the vagina, when the operation is over, and the speculum withdrawn.

The *actual cautery* is a favourite remedy with some practitioners, especially in France, in the treatment of chronic induration or inflammation of the vaginal portion of the cervix uteri. The application is made through a horn speculum, specially constructed for the purpose, and is repeated at intervals of a few days, the treatment extending over a considerable time. The effect produced by this frequent superficial application of the actual cautery, is

contraction of the surface, and consequent diminution in bulk of the tissues beneath. By carefully covering in succession each portion of the indurated surface with eschars, much may be done in reducing the bulk of the hypertrophied part. It is hardly necessary to remark, that the application should be very carefully made.

With reference to the admissibility of the more severe methods of treatment last mentioned, it is to be observed that they are better suited for cases in which there is much increase in the size and thickness of the vaginal portion, than where there is simply a morbid condition of the surface present. The cases are certainly not very common in which, by a persevering use of the other and less severe methods of treatment, all the desired good may not be obtained; but it is not always so, and a few cases remain for which more stringent measures are required.

With respect to the mode of applying the actual cautery, some remarks are necessary. Women have naturally an objection to any plan of treatment involving use of an iron which must be heated in the fire; but in the electric cautery, introduced into English surgery by Mr. John Marshall, we have a means of getting over this difficulty. The most convenient and portable apparatus for the employment of the electric cautery is one exhibited lately at a meeting of the Obstetrical Society of London.* The cervix uteri being exposed by means of the speculum, and its surface thoroughly dried by means of lint, the heated wire is applied, and the cauterisation effected. It is advisable at first to apply the cautery slightly, to allow of a few days' rest, and to adjust the strength and depth of the subsequent cauterisations, as may appear necessary. It is advisable to touch, by means of the heated wire, a considerable portion of surface, rather than to cauterise a smaller part; for it is obvious that the contraction thus produced will be more considerable. The object in view will be attained by applying the wire so as to describe on the surface of the cervix, first a series of parallel lines, and then a second series at right angles to, and over, the first series.

The repeated application of the tincture of iodine to the enlarged and inflamed cervix uteri has been found productive of great benefit in many cases, and may be especially recommended where the patient is of a sluggish habit of body, or where a scrofulous diathesis is suspected. Blistering fluid has been occasionally used

* An account of this instrument (by Mr. Robert Ellis) will be found in vol. iii. of the *Obstetrical Transactions*.

as an application to the surface of the cervix uteri in cases of chronic inflammation.

The *excoriations*, or abrasions, which are occasionally observed on the vaginal portion of the cervix, and which are to be distinguished from the so-called 'ulcerations' of the mucous membrane of the cervical cavity, are generally, as already stated, very secondary in importance. They are only observed in cases where the other morbid conditions present call more directly for attention; and they usually disappear when those other morbid conditions are removed. They are best treated by applying a solution of nitrate of silver, or the solid stick itself, to the surface affected; while the uterus is maintained in a state of rest, and care taken both to remove the congested state of the organ, and to diminish the excessive secretion of the cervical glands therewith usually associated.

CHAPTER X.

TREATMENT OF THE VARIOUS FORMS OF PROLAPSUS OF THE UTERUS, BLADDER, &c.; OF FLEXIONS OF THE UTERUS; AND CHRONIC INVERSION OF THE UTERUS.

VARIOUS FORMS OF PROLAPSUS OF UTERUS.—Treatment to be adapted to the peculiarities of the Case—Prolapsus due to Hypertrophy of the Vaginal Portion alone; Operations required—Prolapsus due to Hypertrophy of Supra-Vaginal part of Cervix; Operations required—Other Forms of Prolapsus—Operations for constricting Ostium Vaginae, and for diminishing Size of Vaginal Canal—Pessaries and external Supports of various kinds—Manipulations required—Treatment of the Uterus itself.

PROLAPSUS OF THE BLADDER, VAGINAL WALL, OR RECTUM, THROUGH OSTIUM VAGINÆ.—Operative and other Procedures necessary.

FLEXIONS AND VERSIONS OF THE UTERUS (Unimpregnated).—Symptoms produced by Retroflexion of the Uterus—Difficulties encountered in curing Retroflexion—Treatment by Mechanical Means; Objections thereto considered—Other Methods.

CHRONIC INVERSION OF THE UTERUS.—Treatment by Reduction; by Extirpation.

VARIOUS FORMS OF PROLAPSUS OF THE UTERUS.

IN endeavouring to decide on a plan of treatment which shall be adapted to the requirements of the particular case before us, what we have to do is to make, in the first place, a very exact diagnosis of the physical condition of the parts involved; and in the second place, obtain a history of the previous condition of the patient so complete, that we are able to trace, as far as possible, the connection between the effect present—the prolapsus—and the cause or causes which may have led to it. The various forms of prolapsus of the uterus, vagina, &c., have a different mechanism in different cases, and this mechanism we must endeavour to appreciate, if success is to attend our efforts to cure or relieve the patient. Much mischief has resulted from the not very uncommon practice of regarding prolapsus as a condition to be treated in all cases on one and the same plan.

The cases of prolapsus of the uterus are naturally classifiable as follows:—

1. The prolapsus is caused by absence of the usual support of the uterus from below and laterally; or,

2. It is caused by undue pressure or weight of the uterus above; or,
 3. The prolapsus is caused, or, to speak more correctly, constituted, by a morbid growth and extension downwards, and consequently outwards, of the lower part of the uterus—the cervix; the fundus, or upper part of the uterus, remaining in its proper place, or pretty nearly so. This peculiar form of prolapsus uteri is witnessed to a most marked extent in laundresses, cooks, and individuals whose occupations necessitate much standing.

It will simplify matters if we consider, in the first place, the treatment of those cases in which there is *hypertrophy of the cervix*—the prolapsus being not of the whole uterus, but of the cervix alone.

Adopting Huguier's classification, these cases resolve themselves into two subdivisions. In the first, we have cases in which the hypertrophy affects (*a*) the vaginal portion of the cervix alone, a conical or rounded body projecting downwards, at or beyond the os externum. In the second, we have (*b*) those cases where the hypertrophy mainly affects the supra-vaginal portion of the cervix. In the first, as already remarked, the vagina has pretty nearly the normal length; in the second, the length of this canal is much diminished.

(*a*) *Cases of Hypertrophy of the Vaginal Portion alone.*
 —These form a very small proportion of the cases actually observed. It is quite evident that, in cases of this kind, there can be no question as to the impropriety and uselessness of pessaries: the only efficient treatment is removal of the hypertrophied cervix. The mass to be removed has occasionally a length of several inches; and at its superior extremity it may be of considerable girth. The removal may be effected by the knife or curved scissors, by the wire or chain *écraseur*, or by the galvano-caustic apparatus. The knife is of course the more expeditious and manageable; but the hæmorrhage from the cut surface is often very troublesome. The only objection to the *écraseur* is that, unless the chain fits very closely into the apex of the instrument, there is a liability of drawing into the instrument tissues which ought to be left uninjured. Hence, if the chain *écraseur* be used, the chain should be applied, not close to the summit of the vagina, but a little below this. The galvano-caustic apparatus has, like the *écraseur*, the advantage of preventing hæmorrhage. On the whole, the course to be recommended is the use of the knife, or curved scissors if the neck of the growth be very thick—the actual cautery being ready for use to arrest hæmorrhage, and the use of the chain or wire-rope

écraseur, or the galvano-caustic, when the neck of the tumour is smaller. The actual cautery is of great value in such cases; and its use in operations about the internal genital organs is far too limited in this country. If, however, there be any objection to the use of the actual cautery, the bleeding may be placed effectually under control by applying a pledget of lint, soaked in tincture of sesquichloride of iron, on the cut surface, and carefully plugging the vagina by means of the speculum, as in ordinary cases of uterine hæmorrhage. In any case, prior to performing the operation, the tumour should be gently pulled down as far as possible, to facilitate the necessary manipulations.

Dr. Marion Sims has practised a modification of this operation. This consists in covering the stump, as it may be termed, of the amputated part, by mucous membrane; the anterior half being covered with mucous membrane previously dissected off, and being made to lap over, as in the flap operation in ordinary amputation; and the posterior half being covered by a flap similarly made from the under surface of the cervix.

(b) *Cases of Hypertrophy of the Supra-Vaginal Portion of the Cervix Uteri.*—The proper management of these cases must be considered as still open to question—the views of Huguier not having as yet obtained the sanction of all the best authorities on the subject. If, in introducing the sound, we find the length of the cavity of the uterus to measure four, five, or, in extreme cases, as much as nine inches, it is evident that, the os uteri being at or outside the vaginal aperture, the fundus is still in its proper place; and the only question is, how much of this abnormally lengthened cavity belongs to the cervix proper, and how much to the body of the uterus. We are too much in the habit of regarding the portion of the cervix above the vagina as a part of the uterus proper; but anatomical facts should teach us that the cervix above and the cervix below the seat of reflection of the vagina, are one and the same in texture. And hence it is evident, that as the vaginal portion may become the seat of hypertrophy, so may also the supra-vaginal portion of the cervix.

Cases of hypertrophic elongation of the cervix are treated by Huguier by excision, on a plan to be presently described. Kiwisch, writing on the subject previously to the publication of Huguier's memoir, states that he has seen great contraction and diminution in the length of the canal produced in these cases by simply lying in bed. In two or three days he has frequently observed a diminution, to the extent of 2 to 3 inches, occur after reposition of

the prolapsed parts, and rest.* The lengthening again occurred in these cases after the patient got about as usual. The facts observed by Kiwisch are extremely important. They show that much good may be done in such cases by simply preventing the lower part of the uterus, with the vagina, from escaping from the vulva, by means presently to be alluded to; and they show also that there is a limit to the benefit to be derived from such palliative measures.

In the cases in which the affection is observed to the most marked extent—viz. in individuals of the poorer classes—we cannot effect much permanent good by simply resting the patient in bed; the time for this can rarely be spared. The two plans of a palliative nature which are open to us to adopt are—1, the use of pessaries; and 2, the closure of the vaginal orifice to such an extent as to prevent the escape of the cervix uteri, after the plan followed by Mr. Baker Brown. Each of these methods of treatment has peculiar advantages, according to the nature of the case. In many instances they prove sufficient; but in some few cases, as might be surmised, they are either inapplicable, or, in the long run, unsatisfactory.

The operation devised and practised by Huguier for the relief of cases of longitudinal hypertrophy of the cervix uteri is intended to cure the patient at once. The object of the operation is to remove the hypertrophied tissue by the knife. It is accomplished as follows:—An incision is made behind the os uteri through the vaginal wall, of a semicircular form, and directed towards the centre of the cervix. Dissection is now made upwards, in order to expose the hypertrophied cervix, and separate it from its connections posteriorly—great care being necessary to avoid the reflexion of peritoneum here situated. A corresponding incision and dissection is now made in front: here, however, great care is necessary to avoid injuring the bladder. As much of the cervix having been exposed as is considered advisable, it is removed by the knife. Huguier at first employed the knife in removing the cervix; but he now employs the *écraseur*, finding the hæmorrhage troublesome when the knife is used. Such is an outline of the operation in question. The result is that a conical piece of tissue is removed, including the os uteri, the vaginal, and a portion of the supra-vaginal part of the cervix. Huguier has performed the operation in 14 cases. In only one of such cases a fatal

result—not due, however, to the operation—is stated to have followed. The operation should be undertaken after a menstrual period; and Huguier believes much of his success is owing to his practice of producing, before the operation, a copious eruption on the inner surface of the thighs, by rubbing in croton oil. He gives opium after the operation. The operation is undoubtedly adapted to many cases, but has not hitherto attracted practical notice in this country. It is applicable chiefly to those very obstinate and long-standing cases of prolapsus, met with among the labouring population. Laundresses appear to be specially inimical to this form of prolapsus—in one-fifth of all the cases, according to Huguier. One marked case which came under my own notice—the first which it occurred to me to examine, with the view of substantiating or not Huguier's views, was that of a laundress. In this instance the uterine cavity was five inches long, and the case was one which, without the use of the sound, would have been considered, and in fact had been so considered, as a case of prolapsus of the whole uterus. For the treatment of cases of this kind, therefore, we have to choose between Huguier's plan and the palliative measures previously spoken of. Huguier's operation is one attended with risk of wounding the peritoneum, and of thus causing fatal peritonitis; though, in the case of an operator having good anatomical knowledge, this risk may not be very great. There is also some risk of pyæmia. The difficulties attending a decision on the subject of the propriety of this operation will doubtless disappear as the facts become better known. The French translators of Scanzoni's work speak favourably of the results obtained in some of Huguier's cases which have fallen under their notice. Chassaignac has performed the operation successfully in several cases.

Other varieties of Prolapsus.—The cases now to be considered are those in which the whole uterus descends lower in the pelvis than usual. The most simple form of the displacement is that which occurs in women after child-birth, where the uterus is larger than usual, and where the supports of the uterus below are weakened or lessened by the process of labour. There we have two causes in operation—firstly, the greater size of the uterus; and secondly, the deficient resistance below. The degree to which the displacement may occur varies in different cases, and in most instances also more than one cause comes into operation. Thus, if the perinæum be injured and torn, the support from below is lessened; and this is sufficient in many cases to give rise to severe

prolapsus. Or if, on the other hand, the uterus remain large and unwieldy for any considerable time, the effect of the continued pressure is, in the end, such that the organ descends lower and lower, and prolapsus may occur without any previous injury to the perinæum. A ruptured perinæum, rapidly succeeding pregnancies; an occupation necessitating much standing or physical exertion of any kind—this combination of circumstances is perhaps the best adapted for inducing prolapsus of the most troublesome and intractable form. In old people prolapsus is frequently due, as Dr. West remarks, to the absorption of fat from the vulva—the vaginal orifice being thus increased in size. The same circumstance is now and then observed in very fat women, who, from severe illness, have rapidly become very thin. But it is not necessary that the uterus should have undergone the process of pregnancy, in order that it may become hypertrophied and prolapsed. Single women, who are subjects of profuse menstruation and leucorrhœa, often suffer from mild forms of prolapsus; and a sudden exertion of any kind may materially increase the evil. Indeed, severe forms of prolapsus occasionally owe their origin, so far as can be ascertained, to violent or sudden straining alone. In both classes of cases, that is to say, in single and in married women, the same causes which lead to the congestion and hypertrophy of the uterus also cause a defective tonicity of the parts which naturally contribute to support it, viz. the walls of the vagina; the canal becomes expanded, the uterus falls lower and lower, the canal loses its curved shape, and the uterus finally appears at the ostium vaginæ. The presence of the evil itself tends to perpetuate and intensify it, for the irritation of the tumour, presented by the enlarged uterus, excites straining efforts at stool and at other times: there are constipation, occasionally distension of the bladder, and a conjunction of circumstances all of which favour the descent of the uterus.

It is thus obvious, that in dealing therapeutically with particular cases the indications are sometimes complex. The therapeutic measures may, however, be classed under two heads: 1. Means by which a greater support may be given below; and 2. Means by which the pressure downwards may be diminished. A combination of these two methods of treatment is usually required.

Under the first head come *operations for constricting the vaginal canal or the vaginal aperture*. Dr. Marshall Hall, Fricke of Hamburg, and Mr. Baker Brown, have devised and carried out operations having this end in view. Mr. Baker Brown has the

merit of really perfecting and utilising the operations in question.

The most obviously proper case for an operation of this kind is that in which the perinæum has been ruptured—prolapsus having thereupon followed. Mr. Baker Brown has treated a large number of cases of prolapsus dependent on, or associated with, the presence of this lesion by a particular operation—the effect of which is to constrict the lower part of the vaginal canal, and to increase the depth of the perinæum. The operation consists in removing from within the vagina, close to the posterior commissure, a piece of the mucous membrane of the vagina of a horse-shoe shape; a surface is thus denuded at the situation in question, of a crescentic shape, deepest in the centre, and tapering upwards on each side.* The opposite and corresponding surfaces are then brought together, first by deep quill sutures, and secondly by superficial interrupted sutures. When the sutures are tightened and fixed, the aperture of the ostium vaginæ is considerably diminished, as is also the capacity of the vaginal canal itself close to the orifice. The deep sutures are removed on the third day; and the general management of the case is identical with that recommended in cases of operation for ruptured perinæum. This operation is certainly indicated in the kind of cases above specified, but it is also not uncommonly practised in cases where the injury to the perinæum is less marked, and where the vaginal aperture has become gradually larger and larger, owing to continued pressure from above. In some of these cases also the operation is of considerable service. The operation will not and cannot do everything; and if the operation forms the only treatment, the treatment will probably be found, as it has been found, to fail of its effect in some instances. Even in very bad cases, where, the evil returning, the large uterus bursts anew through the wounds set up by the operation, the evil is mitigated; the relief, temporary though it be, is a gain, and time is afforded for treating the case in other ways, the patient being preserved meanwhile from the annoyance of the external appearance of the tumour. It is probable that in many of the cases where the operation has failed in curing the patient, the explanation is to be found in the fact that longitudinal hypertrophy of the cervix, and not prolapsus of the whole organ, was the condition actually present. In properly selected cases, then, there is every reason for assuming that a plastic opera-

* *Op. cit.* 2nd ed. p. 99.

tion on the vaginal orifice and lower part of the canal is a valuable constituent in the treatment.

Another operative procedure consists in diminishing the calibre of the vaginal canal through the greater part of its course by pinching up successively folds of the mucous membrane by means of small forceps specially constructed for the purpose, termed 'serre-fines,' and left in the vagina until the mucous membrane included is separated. The forceps used are Desgrange's—each $2\frac{3}{4}$ to 3 inches long, the blade a little curved, the arms crossed, and a fold of mucous membrane about an inch long is included. They are applied by means of the valved speculum, two or three of the forceps in the space between the valves of the speculum. The forceps fall off from the fifth to the tenth day, and are withdrawn by a thread previously attached. The result thus obtainable is that the whole vaginal canal can be narrowed to any extent; the operative procedures are, however, necessarily spread over a space of several days. For further particulars concerning the operation, the reader is referred to the American translation of Scanzoni's work, where the instruments in question are depicted.

Another means of constricting the vaginal canal consists in application of caustic agents.

Such are the operative measures for relieving prolapsus—their object being to effect a radical cure. We have now to speak of other measures of supplying the deficiency in the support given to the uterus.

The first and most important of these consist in applications by means of which the tonicity of the vaginal tissues is restored where these have become weakened and relaxed. Remedies of this kind are especially valuable in the cases of prolapsus not considerable in degree or of long standing. Frequent injections of cold water; the use of the cold hip-bath; injections into the vagina of astringent fluids, decoction of oak bark, or tannin, or alum. Persistence in this treatment for a few weeks often affords very great relief, even in bad cases; the good derived is in part dependent on the action of these applications on the uterus itself.

Pessaries, and artificial supports of various kinds, come next in order. Globular pessaries introduced within the vagina always, in a degree, perpetuate the tendency to prolapsus. Such a pessary relieves, because it occupies that space into which the uterus has a tendency to fall; and it is evident that natural curative efforts will be in a manner negatived so long as such a pessary remains,

for, as Dr. Rigby remarks, 'it produces the very thing we wish to avoid—it dilates the vagina.'* This argument does not apply, to the same extent at least, to the 'stem' pessaries, nor to some other forms of apparatus used. Pessaries have been alternately lauded and abused; and the arguments for and against them have not always been of the most reasonable character. Dr. West considers that pessaries are not necessary in slight or in recent cases, e.g. where the only fault is that the uterus is in a state of imperfect involution after delivery; or in cases where the uterine disease leading to the prolapsus is still in a state for treatment. In this limitation all must agree. On the other hand, they are applicable in more severe cases where radical cure is impossible, or, for other reasons, inadmissible; or for temporary relief, as in the case of poor women, who are obliged to follow their avocations and imperatively require a support. Very frequently we are obliged, in cases of the latter description, to use a pessary, because the pessary has been used before.

The sponge pessary is very convenient for cases of prolapsus not of the worst form or degree. Two or more should be kept in use. The patient is to be instructed how to introduce the sponge; and a fresh one should be introduced night and morning, great care being taken to soak each sponge for several hours before again using it. The sponge pessary is easily applied—it allows of other treatment, and it is very effectual in properly selected cases.

The box-wood pessary is made globular or oval in shape, of various sizes, or in the shape of a disk, with a small perforation in the centre. Both forms of the box-wood pessary are very useful, and they are largely used in the cases of prolapsus amongst the poorer classes. They are cleanly and simple. They should be changed every week, or oftener if possible. The globular pessary can be taken out and reintroduced by the patient herself. The disk or ring pessary requires to be applied by the medical attendant. In introducing the globular or disk pessary, care must be taken that the size is adapted to the requirements of the case. Very frequently we meet with cases in which the size has been gradually increased, until the vaginal aperture has been very greatly distended, and where the proper treatment is to remedy this state of things by an operation, before resorting again to the use of a pessary.

The india-rubber globular air pessary, known as the air pessary

* *Op. cit.* p. 138.

of Gariel, is a very efficacious and useful instrument. It consists of a simple hollow india-rubber ball, adapted in size to the case before us; or of an india-rubber hollow ball, to which a little tube of similar material is attached. The ball is introduced in a collapsed state; after insertion it is inflated, and the air retained by means of a screw plug—the end of the tube being attached to a girdle. It is easily manageable, and I have found it well adapted for cases presenting themselves in private practice. It sometimes gives rise to irritation. Various other modifications of this pessary are in use. One is a disk-shaped india-rubber air pessary; another, made by Mr. Salmon, consists of a hollow ball affixed to a pad, which latter is worn outside. There are few cases in which these various forms of the india-rubber pessary are not applicable, that is to say, the necessity for a pessary having been admitted, and the shape of the pessary adjusted to the requirements of the case. Zwanck's pessary consists of two oval, flat, rounded pieces of ebony, or other hard substance, connected by a hinge. After being introduced, the two pieces are separated by a simple piece of mechanism to any necessary degree, and the instrument then supports the uterus much in the same manner as the disk pessary before mentioned.

Of stem pessaries, one of the best is that made by Mr. Coxeter, consisting of a gutta-percha vaginal stem, hollow and having the shape of a funnel. The wide end of the stem supports the uterine cervix, and the stem is retained in its place by means of strings attached externally to an abdominal belt. This is a form of pessary very well adapted for bad cases.

External Supports.—Many women derive support and assistance sufficient to enable them to go about their avocations from wearing a perinæal band, to which a sort of cushion is fixed; the cushion presses on the perinæum and prevents the prolapsus occurring; the band is fixed to an abdominal belt in front and behind. There are two forms in which the apparatus is made, termed respectively Hull's and Ashburner's. The pressure of the bandage round the loins or against the sacrum appears to afford some patients great relief.

Manipulations necessary in Cases of Prolapsus.—We are sometimes called upon to return the uterus within the vagina, the patient being unable to accomplish it; and in some cases the difficulty is almost insurmountable. The patient should be laid on the back, with the hips raised; the tumour should then be grasped by one or both hands, previously well oiled, and a gradual

steady pressure exercised in the direction upwards. If difficulty be encountered, cold is to be applied (iced water may be necessary), and the recumbent position maintained. Dr. M'Clintock has found strapping the tumour of great assistance in effecting its reduction in cases of this kind. It is remarked by Dr. West, that in bad cases we sometimes meet with a hard hypertrophied condition of the vagina, resulting from frequent exposure, friction, and morbid growth: this may not only interfere with facility of reduction, but with the possibility of treating the case successfully subsequently. Another condition, also capable of interfering with reduction, is adhesion of the intestines to the pouch, and to one another, in cases where they have become prolapsed together with the uterus. Before introducing pessaries, they should be always, the india-rubber pessaries excepted, well oiled. When the prolapsed organs are ulcerated, as is not unfrequently the case, a slightly astringent lotion should be applied, and great cleanliness observed. These ulcerations readily heal when the parts are restored to their normal position.

The Treatment of the Uterus in Cases of Prolapsus.—This is a part of the treatment very frequently altogether overlooked. It is, however, extremely important that this feature of the case be always kept in view, the probability being, that in most cases of prolapsus the starting-point has been a defective or altered condition of the uterus perfectly and completely amenable to treatment. The condition of the uterus which most frequently calls for therapeutic measures in cases of prolapsus, is undue size and fulness of the organ. When the uterus is very large, it usually rises into the abdominal cavity; but it is a degree of largeness short of this which is present in cases of prolapsus. The peculiar alteration in the cervix of the uterus which has already been alluded to, and to which the researches of Huguier have especially called attention, is an hypertrophy of the cervix. We have now, however, to do with an hypertrophy of the uterus proper, that is to say, of the portion above the cervix. The indications in cases of prolapsus associated with enlargement of the uterus, or this combined with flexion of the organ, are, to promote by all possible means the contraction of the organ, to relieve the fulness of the vessels in and about the uterus. The measures which are most appropriate to this end consist in the observance, for as long a time during the day as is compatible with the maintenance of the general bodily health, of the horizontal posture;—during the period of menstrual discharge this is exceedingly

important—attention to the state of the bowels, never allowing constipation to occur, derivation to the skin by means of frictions, baths, &c. (see ‘Treatment of Leucorrhœa’). It is extremely important that the digestive organs be in a healthy state of activity. Our object is to hasten change of the tissues of the body, for in their changes the uterus necessarily participates. Ferruginous preparations are frequently very serviceable in cases where the congestion of the uterus is dependent on a weakened or debilitated condition of the body generally.

The cold vaginal douche is of very great service in diminishing congestion of the uterus, as already repeatedly observed. It is of the greatest assistance in the treatment of prolapsus, not only on account of its action on the uterus itself, but from its effects in inducing contraction of the vaginal canal.

PROLAPSUS OF THE BLADDER, VAGINAL WALL, OR RECTUM, THROUGH THE OSTIUM VAGINÆ.

Prolapsus of the bladder, or of the rectum, through the vaginal aperture, most frequently occurs in connection with descent of the uterus, or of its hypertrophied cervix; and consequently the treatment of ‘cystocele’ and ‘rectocele’ is generally involved in that of uterine prolapsus of various forms. The most marked examples of cystocele occur in those cases where the uterine cervix (its supra-vaginal portion) is greatly hypertrophied and lengthened. But we occasionally meet with prolapsus of the bladder or of the rectum through the vaginal aperture, in cases where there is no decided alteration in the position of the uterus or any part of the organ, and where the only explanation of the occurrence is absence of efficient support at the ostium vaginæ.

In many cases, therefore, the treatment of the displacements in question consists in remedying the uterine displacement, which is the cause of the evil; the secondary inconvenience disappearing on removal of the primary one. In other cases, however, the prolapsus of the bladder or rectum requires special treatment. The treatment which is most effectual consists in diminishing the size of the vaginal outlet by performing operations analogous to those which have been described as sometimes applicable in the treatment of prolapsus uteri; but measures of a more simple nature should be first tried—such as assiduous employment of the cold douche, astringent lotions, attention to the state of the bowels, &c. Pessaries should at the same time be employed, or external support

be applied by means of the pad and abdominal bandage. When these measures fail, operative procedures are sometimes required. The operation performed by Mr. Baker Brown in cases of cystocele,* and which has been found to answer very well, consists in removing a piece of mucous membrane of a horse-shoe shape from the inside of the posterior commissure, just as in the operation for ruptured perinaeum, with one difference only, that the strip of mucous membrane removed is a little wider. The raw surfaces are then brought together by deep and superficial sutures, and the posterior portion of the ostium vaginae is thus considerably narrowed. Further, Mr. Brown removes a smaller piece of mucous membrane at each side near the anterior commissure, in order to produce some contraction of the vaginal orifice laterally also. The operation required in cases of rectocele is identical with the one for cystocele, the object in both cases being to diminish the size of the vaginal aperture.

FLEXIONS AND VERSIONS OF THE UTERUS (*unimpregnated*).

There appears to be little doubt that *retroflexion of the uterus*—that form of flexion of the uterus which is most frequently the object of attention—is a displacement brought about by the conjoined operation of two or more causes. The first or predisposing cause appears to be the puerperal state. *After delivery the uterus is larger than at other times; the ligaments are lengthened; and it is more easily moved from its position. Moreover, the uterus itself is at this time relaxed, and more easily bent and twisted. If, therefore, under these circumstances, the uterus being large and lax, mechanical pressure be applied, in consequence of the patient moving about too soon after labour, or moving suddenly, or receiving a sudden blow, it may happen that the uterus is thrown backwards, partly retroverted and partly flexed; and, once dislocated from its proper position, the mischief goes on increasing. The bearing-down pains force the uterus altogether lower in the pelvis; the flexion increases in degree. As Virchow observes, there is a predisposition to a falling backwards of the fundus—the heavier portion—created by the anatomical relations of the parts; for the retro-uterine pouch, being of considerable depth, forms a cavity into which the fundus is readily pushed. Further, when the circumstances are such that the uterus is enlarged and congested, and relaxed from any other cause than the puerperal

* *Op. cit.* pp. 88 et seq

state, the same thing may happen; thus, where the patient has been the subject of profuse losses at the menstrual periods, associated, as such symptoms usually are, with the congestion and relaxation alluded to, retroflexion may be produced.

The symptoms of retroflexion of the uterus are not by any means always alike. In fact, it is remarkable that in some women retroflexion is attended with symptoms of great severity, while in others the lesion escapes notice for a long time, or until the patient's death; and hence very many high authorities altogether deny the importance of flexions of the uterus, attributing any symptoms present, not to the flexion, but to associated inflammation, &c., of the uterus. This is going, as I believe, to an unwarranted extreme. The symptoms in bad cases are the following:—menstruation is painful, the discharge is profuse, and often hæmorrhagic in character. Between the menstrual periods hæmorrhages may be observed. The pains denominated 'labour-like' pains may be present, dependent on the flexion interfering with the escape of the menstrual blood. The patient is, if married, frequently the subject of abortion, abortion being the effect of the retroflexion in some cases, and in many the cause of the dislocation, to begin with. The relation of retroflexion or retroversion of the uterus to pregnancy is a question of interest. It was formerly held, that when the uterus was found pregnant and retroverted, the retroversion had occurred since the commencement of the pregnancy, and was produced by distension of the bladder, this organ, as it increased in size, pushing the fundus back into the hollow of the sacrum. Dr. Tyler Smith argues that this is not the case, but that the retroflexion comes first.* In many cases, doubtless, Dr. Tyler Smith's explanation holds good.

Frequently the patient complains of severe aching or sharp pain in the pelvis low down; defæcation is almost always painful, sometimes difficult; micturition is disturbed, the neck of the bladder being drawn out of its place or pressed upon; and spasmodic attacks, in which difficult micturition forms an element, are occasionally observed, in addition to the more chronic and milder disturbances of this function. If the fundus be thrown a little to one side, the patient may experience a troublesome, almost incessant pain, extending down the back of the thigh on one side. In a case which I treated successfully, this was the symptom which was the most irksome to the patient; she was unable to sit

* *Obstetrical Transactions*, vol. ii. p. 286.

still for any length of time on account of the great uneasiness present. This seemed to depend on the pressure of the fundus on the trunks of the nerves emerging at the side of the pelvis from the sacrum. The symptoms relating to micturition are, as Dr. West observes, less obvious, or they may be absent, if the flexion be a little to one side, so as to give obliquity to the direction of the uterus. There is frequently a dragging sensation at the umbilicus; and, lastly, it sometimes happens that, in consequence of the straining efforts produced by the flexion, the uterus is prolapsed or much lower in the pelvis than it should be; added to which there may be more or less profuse leucorrhœa. The tumour constituted by the displaced fundus is often excessively tender to the touch, becoming congested from pressure at the seat of flexion.

In reference to the question of treatment, we have to deal with very different degrees of difficulty in different cases, a fact which seems to have been overlooked by some of those who have taken part in past discussions on this subject. There are cases for which it would seem almost impossible to do much; or, at all events, the difficulties are such, that other cases are in comparison very simple. The principal difficulty, and one which is most frequently encountered in practice, arises from the fact that the affection has persisted a long time unrecognised as such, or, if recognised, has not been treated. The result of allowing the uterus to remain retroflexed for a considerable time is, that the walls of the organ, at the seat of the flexion, become atrophied and thin, and it is easy to see that this must materially interfere with the cure, the *stem* on which the fundus rests being so far weakened. It is the opinion of some pathologists, that this thinning of the walls at the seat of flexion, which is usually at the junction of the cavity of the body of the uterus with the internal os uteri, is the primary evil, the retroflexion being secondary. This view seems to me not the correct one. In any case, however, as regards the treatment, the fact remains, that the thinning frequently exists. Another source of difficulty arises from the fact, that the fundus, dislocated and turned backwards into the recto-uterine pouch, sometimes becomes fixed there by adhesion—glued in its unnatural position by false membranes. This difficulty is even greater than the first. A further difficulty is encountered when the fundus uteri is the seat of fibrous growths, dragging it downwards. On the other hand, we have encouragement to persist in our endeavours to cure the patient in the following considerations:—The uterus is a plastic organ—a passive organ, it may be said. Its shape may be altered, within certain

limits, without very much difficulty, if only sufficient time and patience be bestowed upon it; and ordinarily, the organ does not resent manipulations carefully performed.

The two extreme kinds of cases which may be met with in practice are these. In the first case, the patient's malady is detected early. She has been perhaps recently delivered, and we find the uterus retroflexed. On introducing the sound, in such a manner that the concavity is turned backwards, the instrument readily passes into the uterus (see chapter 'On Use of the Sound'). After so introducing it, we find that by gently twisting the sound on its axis so as to turn the concavity forwards, the instrument can be pretty readily brought into the opposite position, and after this has been accomplished, the tumour which was previously felt behind the upper part of the vagina has disappeared. The turning of the instrument forwards is effected with greater or less ease in different cases; and if it be accomplished easily, while it is known that the flexion is not of old date, this affords presumptive evidence that the case is an easy one to treat. The second kind of case is that in which the sound, having been introduced as above, cannot be turned forwards, and in which the attempt to turn it forwards produces great pain, while it is known that the symptoms present date back for some time, perhaps for years. There would be probability of adhesions, or of presence of tumour of the fundus uteri, in such a case. Another variety is that in which the turning of the sound forwards is easy, while there is still reason to believe the disorder an old one: the explanation of this would be, that the uterine wall is very thin at the seat of flexion.

Now it is impossible not to see, that if we treat all the cases above alluded to in the same way, very different results must be expected in different instances. Each case must be managed as circumstances admit. Cases in which there is adhesion, or in which the fundus is bent down by the presence of fibroid growths in its substance, are not cases for active treatment of any kind. If we meet with an uncomplicated case of flexion sufficiently early, the only treatment required would be to keep the patient in the horizontal position for a month or two, or chiefly so at all events, and to introduce the sound at intervals of a day or two, in order to restore the uterus to its proper position. Massmann* has recently remarked on the importance of early treatment in these cases, and there can be no question that very great success would follow this treatment,

* *Monatssch. f. Geburtsh.* June 1861.

were it always possible to carry it out. The only difficulty is, that we rarely do see cases at this early period. More commonly we find that, by means of the sound, we can restore the fundus to its proper place; but the moment the sound is withdrawn, the fundus falls back into its old position. The rapidity with which this occurs is a kind of guide to the nature of the case. Thus, having restored the fundus, we let go the handle of the sound, still leaving it in the uterus; the handle will then be seen to turn round of itself while the fundus is falling backwards; if the turning take place rapidly and at once, this indicates that the cure will be difficult. If the sound remain in its new position for some time, this, on the contrary, shows that the cure may be more easily effected; and, as the cure advances, the sound will remain longer and longer in its new position. It is evident that if we could retain the sound in the uterus indefinitely, the uterus would, probably at all events, be in the end restored to its natural shape. Carrying out this principle, instruments termed uterine supporters, or intra-uterine pessaries, have been devised and constructed to maintain the uterus in its proper position. Dr. Simpson has contrived two instruments—of these, one has its fixed point from without, a stem passing into the uterus; a second has its fixed point within the vagina. Dr. Simpson's instruments have been largely used. Valleix's instrument has its fixed point external. Detschy's instrument is a stem which rests on, and is fixed below to, a Zwank's pessary. These and other instruments will be found figured in the American edition of Scanzoni's work. The objections to all fixed instruments hitherto brought forward appear almost insuperable, though the objections are not equally weighty in all cases. If the uterus be strongly inclined to bend backwards, there will be a constant pressure against the extremity of the intra-uterine stem, which may lead to perforation of the uterine wall, or, short of this, to violent irritation, inflammation, peritonitis, and death. Again, it is very difficult so to adjust these instruments, where the tendency to flexion is strong, as to prevent their being thrust out of the uterus soon after introduction, and the patient is perhaps for a day or two subjected to pressure of the instrument, which is really in the vagina, while it is supposed to be in the uterus. There are other objections; but these are the chief.

Dr. Moir* has written a very able paper on the subject of the treatment of retroflexion. He at first used a straight bougie the

* *Ed. Med. Jour.* Feb. 1860.

length of the cavity of the uterus, and bulbed to prevent its expulsion. This was left in the uterus. Latterly he has preferred to dilate the os largely by means of sponge tents gradually increased in size; and, having done this, he allows the uterus to contract on wire bougies covered with gutta percha, these being gradually reduced in size. His object is to allow the uterus to contract very gradually, and to make it contract in such a manner, that it at the same time acquires the proper shape.

I have devised an instrument which will, I believe, be found of great assistance in the treatment of certain appropriate cases. No one instrument, and, indeed, no one plan of treatment, can be applicable in all cases.

To avoid repetition, I will at once state the principles and plan of treatment which I conceive applicable in those cases where mechanical treatment is at all necessary or practicable.

The first step is to ascertain how far the uterus bears the introduction of the sound alone. In a few cases, the introduction of the sound is said to have produced great pain, and to have been followed by severe hæmorrhage. I have, however, never found it so. If the sound cannot be borne, it is evident that continual wearing of an intra-uterine pessary will be impossible. The next step is to ascertain the force and strength of the flexion by using the sound as above directed, and on the basis of the information thus acquired, to adjust the following treatment. If the uterus remain for a few minutes in its proper position, the case is one fitted for continuous wearing of the instrument in the manner to be presently described. If, on the other hand, the flexion is so strong that it returns immediately, the use of the instrument is to be postponed, and the following plan followed:—The patient is to remain in bed, or lying down. The bowels are to be freely opened, and a daily action produced by administration of a small dose of castor-oil each morning. Once each day, or twice a day, according to circumstances, the sound is to be introduced, and restoration effected, the uterus being kept in its proper place for a few minutes each time. After this plan of treatment has been persisted in for a week or ten days, it will probably be found that less and less difficulty is encountered. Next comes the use of the instrument. The instrument I have devised consists of an ivory stem, just the length of the uterine cavity: it may be necessary to have the length of this slightly different in different cases. This stem is fixed below on an india-rubber ball capable of being inflated with air by means of a slender tube, at the farther extremity of which is a

stop-cock. The instrument is introduced uninflated, and after introduction the ball is inflated, and the stop-cock turned. The intra-uterine stem cannot escape from the uterus, because the ball below fills the vagina and prevents it. The size of the ball, or the degree of inflation, must vary in different cases, according to the size or distensibility of the vagina; for if the ball do not fill the vagina it does not accomplish its purpose. This instrument is thus to be worn during a whole day at first, the patient being kept in bed; and, if borne well, it may then be worn for a longer period. Finally, the patient may be allowed to get up and walk about. It is not advisable for the instrument to be worn longer than two or three days at a time; and, after each removal, the vaginal douche should be freely used. The cold water has a good effect also in inducing the uterus to contract. The length of time necessary to restore the uterus to its proper shape will vary according to the nature of the case; but much may be done in two or three weeks. A case in which the flexion was not very strong I brought to a successful issue in three weeks' actual attendance, the patient being then able to leave for the country, still wearing the instrument.

The difficulty I at first met with in treating these cases with the above instrument was in its actual introduction. This is got over by the preliminary use of the sound alone for some days, and by thus inducing the uterus to remain in its proper position long enough for the instrument to be introduced. The advantages possessed by the instrument in question are considerable; its superiority over others arises from the fact, that the uterus is still allowed a great degree of mobility, and that it is almost impossible for the stem to escape into the vagina, or, which is worse, slip half-way down out of the uterine cavity. Care is necessary to adjust the instrument, but when properly adjusted, little harm can come of it. In using all other instruments, it is impossible to avoid both of the evils alluded to at once. There are undoubtedly some few cases in which this plan of treatment cannot be carried out, the uterus becoming irritated by the retention of a foreign body within it.

A very strong and decided opinion has been expressed by some high authorities as to the danger, the uselessness, and the inappropriateness of mechanical treatment of flexion of the uterus by intra-uterine pessaries. Not long since the question was discussed at great length by the Academy of Medicine in Paris, and a most elaborate report* on the subject was drawn up by Depaul. One

* See *Bulletin de l'Acad. Imp. de Méd.* t. xix. 1853-54.

conclusion rendered evident by the facts and arguments therein contained is, that fatal results have not unfrequently followed the use of intra-uterine supporters. So far as the danger is concerned, it depends, I believe, on the fact that the instruments reported on by Depaul fix the uterus immovably in one position in the pelvis, a plan which I conceive to be highly objectionable. The danger attributed in the report to the use of the sound—for the use of the sound alone has been followed by bad effects in some instances—depends on want of care or dexterity on the part of the operator. There is nothing in Depaul's report to prove that a careful mechanical intra-uterine treatment by an instrument, such as the one which I have above alluded to, is dangerous, that is to say, if used with proper precautions. With regard to the uselessness of the mechanical treatment in question, I have little to add to what is above stated. Depaul has proved that in many cases reported as cured, no such cure had been effected; but that one plan of treatment has failed, is no argument as applied to other methods of treatment. My own experience has satisfied me that a cure is possible in certain cases.

The argument as to the inappropriateness of the mechanical treatment, on which Depaul and others greatly insist, is the one which most concerns us here. Depaul argues that in many cases flexions give rise to no symptoms, and that when symptoms are present, they are not due to the flexion, but to certain associated conditions of the uterine tissue, neuralgia, &c.; and, further, that by treating these associated conditions, the symptoms can be removed, the mechanical deviations remaining. Following a line of argument identical with that in the 'report' in question, Dr. Bennet states his conviction as to the dependence of the symptoms on the coexisting inflammation of the uterus. There is undoubtedly much in the arguments used both by Depaul and Dr. Bennet of a kind requiring consideration; but they appear to me to have overstated the case. Admitting that the inflammation or the neuralgia is the chief cause of the symptoms, is it not the fact that the distortion of the uterus (the flexion) increases and intensifies the symptoms; and is it not probable, and indeed certain, that the patient suffers more under such circumstances from the combined effects of the distortion and of the inflammation, the congestion, or the neuralgia, than would be the case were the distortion not present? The facts on which Depaul bases his conclusions do not seem to me to bear out the decided

conclusion he expresses on the matter. Every practitioner must judge for himself as to the importance of particular symptoms in the particular case before him. Depaul himself admits, that in 'rétroversions exagérées et rébelles aux moyens simples,' something may be required beyond the simple measures, and it is very certain that such cases do present themselves occasionally before us. A very important class of cases are those in which mechanical relief is necessary to enable the patient to bear children; for, as before remarked, flexion of the uterus is by no means an uncommon cause of sterility.

The cases for which the mechanical treatment above described would seem manifestly inapplicable, are those in which adhesions are present; also those in which, the affection having lasted for several years, there is reason to believe that the walls of the uterus are very thin at the seat of the flexion.

Dr. Routh's instrument for the cure of flexion of the uterus, and which consists of a spiral spring covered with india-rubber, to be introduced within the uterine cavity, I have not tried. Dr. Priestley employs a peculiar instrument likely to prove beneficial in cases where an intra-uterine stem is not borne. By means of this instrument, support is applied behind the cervix uteri to the fundus, which latter is thus prevented falling farther in the pelvis. The instrument has its fixed point external to the vagina. The benefit derived from its employment is, probably, chiefly connected with its action in elevating the whole uterus a little upwards in the pelvic cavity.

In cases not admitting of mechanical treatment, much may be done to relieve the symptoms by daily use of the douche, by astringent injections, by insisting on rest at the catamenial periods, and by preventing constipation. Some practitioners have found very great benefit from the employment of an abdominal bandage, such as 'Hull's,' by means of which the weight of the superincumbent viscera is chiefly taken off from the uterus. It must be carefully adjusted to be of any service. Dr. Rigby mentions the very good effect which some patients have experienced from reclining for a time on the hands and knees, with the head low down, and the pelvis elevated, both in procuring relief from the pain when unusually severe, and in effecting temporarily a restoration of the uterus to its proper position.* As a palliative, the simple air pessary will be found exceedingly useful, and by its use alone the patient is often enabled to go about comfortably.

* *Op cit.* p. 161.

Ante-version and Ante-flexion of the Uterus.—The cases are not common in which very active treatment is necessary for the relief of these affections. In most respects, a course of treatment identical with that necessary in the cases of backward displacement is indicated. The congestions of the uterus, the discharges, the pains, which are secondary consequences of the flexion, must be appropriately treated.

The symptoms produced by the presence of simple *version* of the uterus, the canal of the uterus being still in a right line, are not usually of a kind calling for special attention. The displacement in question is more often dependent on pressure of pelvic tumours of various kinds; and the indications as regards treatment have thus reference usually, not to the uterus itself, but to the condition of adjacent organs.

CHRONIC INVERSION OF THE UTERUS.

Formerly, cases of inversion of the uterus of a chronic nature were supposed incapable of relief, except by the use of the knife, or the removal of the tumour by means of the ligature. A fatal result was a not unfrequent result of this practice. To Dr. Tyler Smith is due the merit of showing that another, a better, and a safer method of treatment can and should be adopted, viz. the replacement of the inverted organ, and its restoration to its natural shape and position. And he has placed on record a case in which this method of treatment was successfully carried out in a case of chronic inversion of the uterus of twelve years' duration.* A case has been since recorded, in which reduction was effected, after a lapse of fifteen years, by Mr. White, of Buffalo;† and reduction after intervals of less duration and by the same method, have been recorded by other distinguished observers. Dr. West cured a case of nearly twelve months' duration.

The method pursued by Dr. Tyler Smith, in the case above referred to, has, in principle, been followed by other operators. The right hand was passed into the vagina, night and morning, for several days, the endeavour being made, by squeezing and moulding the uterus with the fingers for about ten minutes at a time, to press the tumour upwards. After repeated trials, the cervix

* 'A Case of Complete Inversion of the Uterus, of nearly Twelve Years' Duration, successfully treated.' *Med.-Chir. Trans.* vol. xli. p. 183.

† Report on Inversion of the Uterus, by Dr. Quackenbush. *Trans. of Med. Soc. of State of New York*, 1859, p. 170.

uteri, which was firmly contracted round the neck of the projecting tumour, began to yield a little, and the tumour could be slightly sunk in the os. After each operation, a large air india-rubber pessary was placed in the vagina, and inflated to as great an extent as the patient could bear. The air-pessary was worn, with few exceptions, day and night. 'After more than a week of these proceedings,' says Dr. Tyler Smith, 'the patient felt a good deal of pain through the whole of one night; and in the morning, when an examination was made, it was discovered that complete reversion had taken place.'* A small air-pessary was afterwards worn for a few days, and the recumbent position maintained. Subsequently the patient became pregnant.

Dr. M'Clintock, in his recent work, very properly insists on the advisability of manipulating so as to return the part last inverted first. Noeggerath succeeded in a chronic case by following a plan involving the adoption of the principle laid down by Dr. M'Clintock. The direction in which the pressure is exercised, and the kind and degree of that pressure, must in other respects be adapted to the requirements of individual cases. The great principle to be kept in view is, that the pressure is to be equally applied, that it is to be a steady pressure, that it is to be maintained for a considerable period. The moulding capabilities of the uterus form the basis on which we have to work; and it is evident that sudden, forcible, and abrupt manipulations are not likely to prove in the least degree serviceable—rather the contrary.

That the attempt at reduction, on Dr. Tyler Smith's plan, will occasionally fail, is evident from facts related by Dr. M'Clintock in his recent work. In two cases, after attempting reduction unsuccessfully, Dr. M'Clintock performed excision.

The excision treatment should never be adopted until a lengthened and persevering attempt at reduction has been carried out; and it should be borne in mind that success has followed after attempts extending over a period of some months. If the patient be capable of taking chloroform, there would seem hardly a limit to the time which might be expended in the endeavour to restore the uterus to its natural shape. If we are driven to perform the operation of excision, the plan followed by Dr. M'Clintock is undoubtedly the best. The plan consists in placing a ligature firmly round the pedicle of the tumour for forty-eight or seventy-two

* *Loc. cit.* p. 188.

hours, and then completing the removal of the tumour by means of the *écraseur*. In Dr. M'Clintock's two cases the patient recovered; and he states that the operation has been performed eight times in Dublin, in all with complete success. The operation has not been so successful elsewhere.

CHAPTER XI.

TREATMENT OF CANCER OF THE UTERUS, VAGINA, &c.

General Remarks on the Curability of Cancer of the Uterus—Predisposing Causes ; Prevention—Surgical Treatment ; limited to certain Cases of Cauliflower Excrescence of Os Uteri—Method of performing the Operation—Palliative Treatment of Cancer of the Uterus ; of the Hemorrhage, the Discharges, the Pain ; Nutrition of the Patient—Cancer of the Vagina.

CANCER of the uterus is undoubtedly one of the most formidable affections to which women are subject. The hopelessness of all treatment which has for its object the radical cure of well-marked cancer of the uterus is now universally admitted by all who have had experience of the disease in question. There is, however, this to be said in the matter, that there is a class of cases in which the disease, either because not so far advanced or so well-marked, does not always appear to kill the patient, or in which, at all events, life is occasionally prolonged for several years.

How are these two classes of cases, the certainly fatal and the possibly favourable cases, to be distinguished ? In order to answer this question, a few remarks on the pathology of cancer of the uterus are necessary.

The form of cancer usually witnessed in the uterus is the medullary cancer. Dr. West found the disease to be 'medullary' in 108 out of 120 cases. Rokitansky and Paget agree in considering the medullary as the common form. The 'epithelial' comes next in order of frequency. In Dr. West's 120 cases, it was present in 10 instances, and there were 2 cases of 'colloid' cancer, the least common of all. Dr. Tanner, who has recently published a very valuable clinical report of cases of 'cancer of the female sexual organs,' also finds the medullary form the most common.* The medullary form of cancer attacks, in common with other forms of cancer, the lower part of the uterus first, in by far the majority of cases. The epithelial form is witnessed in the superficial and

* 8vo., Renshaw. 1863.

exposed portion of the cervix uteri, and it has been known, ever since the name was given to it by Dr. John Clarke, as the 'cauliflower excrescence of the os uteri.' It does not appear that, so far as the anatomical part of the question is concerned, the two diseases differ essentially: we find in both, on microscopic examination, cells and formations which equally indicate the presence of cancer. The difference in the physical characters evident to the touch and the unassisted eye in the two varieties of the disease, appears to depend on the different anatomical arrangement of the tissues affected in the two cases. So that a case of cauliflower excrescence is one in which the cancer attacks simply the surface of the cervix uteri; but a case of cancer of the medullary form is one in which the disease attacks the tissues of the cervix more deeply, extending subsequently to the surface. The results of the enquiries and researches of late authorities, more especially those of Virchow, Meyer, and Dr. West,* make it abundantly evident that the two diseases frequently exist together. A still more recent investigation of the subject, by Dr. Braxton Hicks,† furnishes very valuable additional evidence of the fact. And it is a matter of common observation, that in patients with the cauliflower excrescence, although the disease may appear limited to the os for a time, the medullary form of the disease generally afterwards attacks the uterus, and thus causes death. In the cauliflower excrescence, the villi covering the cervix become hypertrophied, the vessels with which they are supplied exceedingly enlarged, and forming loops; each villus is found to contain cells of every form: nuclear, formative, caudate, mother-cells, spindle-shaped or nucleated fibre-, and binucleated cells, also cells in a state of fatty degeneration. A thick layer of epithelium covers the whole. The microscopical appearances of the villi thus affected are well delineated in Dr. Hicks's paper. The cauliflower excrescence thus owes its shape, texture, &c., to the original configuration and relations of the villi covering the cervix uteri. The microscopic appearances in the other class of cases it is unnecessary to allude to.

When cancer attacks the surface *alone*, it appears that it may be for a very considerable time restricted to that part, though this is rare. The most common event is that the disease attacks simultaneously the superficial and the deep parts of the cervix

* *On Diseases of Women.*

† Remarks on the Cauliflower Excrescence of the Os Uteri. *Guy's Hosp. Rep.* 1862.

uteri, with the result that there is cauliflower excrescence of the os, and infiltration with medullary cancer of the cervix itself.

Hence the distinction between the two classes of cases. Treatment is hopeless when the deeper tissues of the cervix uteri are affected, but not quite so hopeless when the disease is situated more superficially. In Dr. J. Hughes Bennett's classification, the epithelial disease is termed 'canceroid.' From a prognostic point of view the term is useful, conveying, as it does, a prognostic definition.

As bearing on the treatment of cancer, the etiology is of importance. It is evident that whether the disease attack the uterus or any other organ—the stomach, for instance—the general condition of the patient in the two cases, whatever that may be, and which predisposes to the disease, is likely to be pretty nearly identical. But it seems probable that accidental morbid conditions of the womb may determine the disease to break out in that rather than in any other organ. Sterility appears to predispose to cancer of the uterus; undue fecundity has a tendency of the same kind;* depression of the mind, prolonged or excessive in degree; hereditary tendency—these may be mentioned as some of the most commonly recognised determining causes: the two latter predispose to cancer generally. But the knowledge that such and such things predispose to its occurrence gives us no great assistance in warding off the disease. When we see the patient, the mischief has usually been done: the cancer has been in operation, the disease is present, and all we can do is to relieve the condition then before us in the best manner we may. Cancer of the uterus is not unfrequently an insidious disease; its symptoms are often obscure, especially at first; and the disease may be found very considerably advanced without any very marked symptoms having been observed. Looking at the whole facts of the case, it would appear that in a given patient suspected to be liable to cancer, a preventive treatment would be most likely to be successful which had for its object the placing the patient in the very best condition of health, mentally and bodily, in raising the vital powers and the vital activity to the highest pitch. It is very possible that some individuals, who would otherwise fall victims to the disease, might thus be saved, if we were only able to see far enough forward. The

* The result of Mr. Sibley's late observations at the Middlesex Hospital is that the average number of children borne by patients suffering from uterine cancer (5.2) is 30 per cent. in excess of the average fruitfulness of all marriages. (See *Med. Chir. Trans.* vol. xlii. p. 122.) Dr. Tanner found that 79 women affected with cancer uteri, had had, on an average, 2½ children more than usual.

diagnosis is, however, too obscure to allow of this, and not unfrequently we cannot even decide at once whether a certain morbid condition of the uterus—a certain hypertrophy, for instance, of the vaginal portion—is or is not cancerous in its nature. We are obliged to wait and observe the progress of the case to come to a conclusion, and during this time (the condition eventually proving to be cancer) the disease is making progress.

The hopelessness of attempting to cure cancer of the uterus advanced to the stage of ulceration, and affecting the body of the uterus above the vagina, has been alluded to. Drugs are of no avail for purposes of cure, and, by interfering with digestion, they do harm rather than good.

Surgical Treatment.—Extirpation of the whole organ is not to be thought of. Cases of cauliflower excrescence of the os and cervix uteri are, practically speaking, the only cases likely to be benefited by surgical measures. In such cases the propriety of performing amputation of the tumour is pretty generally admitted—when the disease is limited to the vaginal part of the cervix, and when a sound portion is left above through which to make the incision.

The result of amputation of the diseased cervix uteri in cases of cauliflower excrescence is various. In by far the majority of instances the body of the uterus becomes subsequently affected with ordinary cancer, which then runs its usual course; but in some cases it is not so. In a valuable lecture on this subject,* Dr. Simpson states that one patient was alive 18 years after the removal of a large tumour of this kind; and some others in which life was prolonged for a shorter period are mentioned. The disease does not always appear afterwards in the uterus, but it may kill by affecting other organs than the uterus. In the patient above alluded to, who lived 18 years, the tumour removed had all the external characters of the epithelial affection; but it is stated that no 'caudate or spindle-shaped bodies' were found in it on microscopic examination. In the cases operated on by Dr. Hicks these caudate and spindle-shaped cells were present; and, in Dr. Hicks's cases, the disease returned shortly after the operation of removal of the cervix had been performed. This is of some interest practically, and in reference to the prognosis of the case after operation.

The facts hitherto recorded are certainly favourable to an early operation in cases of the above kind. The misfortune is that the

* *Med. Times and Gaz.* Jan. 1859.

case is generally seen for the first time when the disease is far advanced. The operation is of use in two ways :—Firstly, it may possibly prevent a fatal result altogether. Secondly, it will almost certainly postpone that fatal result, even when inevitable. This latter object is attained, inasmuch as the bleeding and the copious exhaustive discharge are at once arrested. The patient would die, or might die, from continuance of these ; and, for a time at all events, this source of danger is removed, and an amount of comfort and ease secured indescribably a boon to the sufferer.

The Operation.—The methods of amputation of the cervix uteri now practised, divest this operation of many of its dangers. The hæmorrhage liable to follow simple removal by the knife, the difficulty of getting at the neck of the tumour—these were the drawbacks to the operation as formerly carried out. Dr. Simpson, in the lecture above alluded to, states that he had used a wire-rope écraseur. Dr. Braxton Hicks has also invented an instrument in which a wire rope is used to cut across the pedicle. The latter is a most useful instrument. Without drawing down the uterus, the loop is passed round the pedicle, and the cervix excised easily and safely, and without liability to occurrence of hæmorrhage. The cutting agent consists of several strands of wire twisted into a rope, the rope being of a thickness commensurate with the requirements of the case: the force is applied by means of a screw.* If the wire-rope or chain écraseur be not used, a curved pair of scissors is better than the knife. Hæmorrhage, if troublesome, must be stopped by the actual cautery, after trial of tincture of iron ; but it is far less likely to occur after the operation by means of the wire-rope écraseur.

Amputation of the cervix uteri is hardly likely to be indicated in cases where cancer of the cervix of the more ordinary kind is present ; there is, in such cases, generally no sound part through which to cut.

Palliative Treatment.—We come now to the question of the management of ordinary cases of uterine cancer. There are three conditions to the relief of which our attention is necessarily more particularly directed—the pain, the hæmorrhage, and the discharge ; and, besides relieving these, we have to devise means for maintaining the functions of the body generally in a state of activity, and to meet any of the many secondary evils likely to present themselves in the course of this disease, with such expedients as may be suggested.

* *Obstetrical Transactions*, vol. iii.

The *hæmorrhage* is to be checked, if slight, by injections of iced water into the vagina and into the rectum; if more severe, by application of tincture of perchloride of iron or tannin, and by the actual cautery, or, in very severe cases, by plugging the vagina. Dr. Simpson speaks very highly of the employment of a saturated solution of tincture of perchloride of iron in glycerine, the solution being applied by means of a sponge to the bleeding surface, and withdrawn subsequently by means of a string attached to the sponge. Tannin in fine powder, or tannic acid, may be applied through a small tube, or, better still, in form of a pessary. Tincture of matico is highly spoken of by some authors. If fluids are injected to check the hæmorrhage, care must be taken that they actually come into contact with the bleeding surface. In cases of cauliflower excrescence not admitting of amputation of the cervix, the soft bleeding masses have been sometimes broken up with the fingers, and tincture of iron injected into the centre, and with the effect of checking hæmorrhage and discharge. Dr. Hicks states that he has found a saturated solution of alum, holding in suspension tannic acid, applied every day, very effectual in reducing the more tender parts of the tumour in cases of cauliflower excrescence. In two of the cases which have fallen under my own notice I was able to effect the same object by applying daily a sponge dipped in strong solution of lunar caustic. To *prevent* hæmorrhage, the patient should, whatever be the nature of the disease, be kept quiet, and especially before and during the catamenial period. Brandy or other stimulants must be given to sustain the patient's strength; and very considerable quantities may be necessary to avert instant dissolution when the hæmorrhage is very profuse. Opium may be very advantageously given at the same time.

The *discharges* present in cases of uterine cancer are often very offensive, owing to the decomposition of the detritus from the ulcerated surface. The frequent use of the douche, by means of which a stream of water is made to pass gently over the affected surface, is the best means which can be adopted for obviating the unpleasantness of the discharge in ordinary cases. Care is very necessary not to push the extremity of the tube against the ulcerated surface, or bleeding may occur. The washing out of the vagina should be performed frequently. The temperature of the water used should be that which is most grateful to the patient. It is often necessary to use a disinfecting fluid as an injection in order to get rid of the offensive fœtor. For this purpose a mixture

of one or two tea-spoonfuls of the solution of chloride of lime in a pint of water, or one grain of chloride of zinc in an ounce of water, are most ordinarily used. Dr. Simpson employs a pessary containing chloride of zinc, or M'Dougal's disinfecting powder; Dr. Tanner has employed logwood in the form of pessary. In cases where it is desirable to hasten the separation of the slough from an ulcer, Dr. West recommends a strong caustic solution to be applied, consisting of one scruple of nitrate of silver in an ounce of water. Powdered willow-bark charcoal is recommended by Scanzoni. Creosote may also be mentioned as a powerful deodoriser. The employment of frequent ablutions with or without the use of some one of these disinfectants is very necessary for rendering the discharge less offensive, while at the same time other indications are thus fulfilled.

The *pain* present in cancer of the uterus is very severe, often exceedingly so, and it requires to be relieved. For this purpose opium, in that form which is found by experience to be most suited to the patient, must be given, the dose being regulated and the form varied according to circumstances. It is not uncommonly found necessary to give opium in very large doses, the patient having become so habituated to its use that a small dose has no effect whatever. Opium is often conveniently given in form of suppository or pessary. Mr. Weeden Cooke informs me that at the Cancer Hospital opium is found most effective when administered in a lavement. Opium, in some form or other, is generally necessary, but other medicines are frequently of great service as accessories. Ether, chloroform, or the two latter combined, cannabis indica, conium, hyoscyamus, &c., are all and each of them of use in certain cases. The application of carbonic acid to the ulcerated surface, by means of a peculiar apparatus, has been suggested by Dr. Simpson, but the procedure is not free from danger; the vapour of chloroform has been also occasionally employed as a local sedative.

The *general nutrition* of the patient demands careful attention. The digestive organs are frequently in a very disordered state, the patient having little or no appetite, and the bowels being extremely constipated. The first and most important part of the treatment consists in feeding the patient frequently and with easily digested food. And we can only find by experience what is best. Milk is often a valuable article of diet in such cases; wine or other alcoholic beverages are generally required. For the relief of sickness and thirst, ice placed in the mouth frequently, is

most beneficial. The bowels require careful attention ; small doses of castor oil, frequently given, are the best means of inducing regularity in this respect, but occasional copious enemata are often necessary to unload the rectum from the accumulations then present. Two or three drachms of Rochelle salt, with a little tincture of senna, forms a useful occasional aperient draught. The act of defæcation is often exceedingly painful, and patients postpone it as long as possible ; the evil may proceed to a very extreme extent if the patient be not watched.

The state of the urinary organs frequently calls for relief. In those distressing cases where towards the end of the disease fistulæ form between the vagina and the bladder, or between the uterus and rectum, or vagina and rectum, but little can be done except to observe great cleanliness. For the relief of the irritability of bladder often present Dr. West thinks highly of the use of Vichy water. Uva ursi or pareira, with a little liquor potassæ, are medicines of established utility in such cases. The triticum repens, highly recommended by Mr. Henry Thompson in the treatment of cases of irritable bladder in the male sex, would also probably be found useful.

The question as to the propriety of giving, to the patient herself, expression of our opinion as to the prognosis in a case of uterine cancer, is a matter of great delicacy and importance. Knowing as we do that in well-marked cases there is literally no hope of saving life beyond a limited time, it is yet occasionally difficult and even improper to say so to the patient. There are few individuals possessed of sufficient fortitude to be told, at once, that they must necessarily die ; and it is very certain that, in many cases, to deprive the patient of all hope is to still further shorten her brief existence. It is wrong to positively assure a woman with cancer of the uterus that she will recover, but it is assuredly not the best thing to summarily dispose of her life by a strong expression to that effect. These remarks apply of course only to cases where cancer is well-marked. It is hardly necessary to urge the importance of abstaining from giving, *in any degree*, an unfavourable prognosis in cases where the diagnosis of cancer is not very well established. Experience has shown that the best observers have been deceived in their prognosis, the case not always turning out so unfavourably as they had expected. It is easy to decide too soon ; by waiting a little, doubts are gradually dispelled.

The question of the treatment of *cancer of the vagina*, and

cancer of the bladder, requires no extended notice. Dr. West, who has observed thirteen cases of cancer of the vagina, considers that the disease is rather more frequently primary in the vagina than has been supposed. For some interesting particulars on this subject the reader is referred to Dr. West's work.* The treatment required in cases of cancer of the vagina is identical with that of cancer of the uterus, the symptoms being essentially the same. Little benefit can be expected from surgical treatment. *Cancer of the bladder* is generally secondary to cancer of the uterus or vagina. The treatment, beyond what is necessary in all cases of cancer, consists in relieving the patient as much as possible from the sufferings attendant on the irritable condition of the bladder usually present, and in providing means for remedying, as far as possible, the inconvenience arising from fistulous openings in the vesico-vaginal septum. Occasionally it has been found necessary to perforate the bladder when the orifice is occluded by cancerous growths.

* *Op. cit.* p. 637.

CHAPTER XII.

TREATMENT OF FIBROUS TUMOURS AND POLYPI OF THE UTERUS.

General Remarks on the History, Causes, and Effects of the Growth of Fibroid Tumours and Polypi of the Uterus—Surgical Treatment of Fibrous Polypi, and Polypoidal Fibroid Tumours accessible from the Vagina—Description of the various Operations required—Treatment of Fibroid Tumours growing outside the Uterus—Removal of the whole Uterus—General and Palliative Treatment necessary in Cases of Fibroid Tumour and Polypus—Fibro-cystic Tumour of Uterus—Mucous and Cystic Polypi of small Size.

It will be convenient to discuss under one head the treatment appropriate in all cases where fibrous growths are found connected with the uterus; for, although they present themselves in many different forms and shapes, in different positions, and having different modes of attachment to the uterus itself, they are all subject, with very few exceptions, to certain general laws, the knowledge of which furnishes us with a basis on which to devise remedial measures suited to individual emergencies.

Respecting the circumstances which call these growths into existence we know but little, and we are consequently unable to lay down rules for their prevention. A particular portion of the uterine substance seems to become unaccountably affected with a morbid tendency to grow and to become hypertrophied. This particular portion—owing to some, perhaps, accidental circumstance—remains forthwith subject only in a certain degree to the laws which guide the growth, the increase or diminution in size, of the other portions of uterine tissue. In the morbid growth itself we find a tissue to all intents and purposes identical with that of ordinary uterine tissue, and differing from ordinary uterine tissue chiefly in regard to its relations. These relations are, usually, of a peculiar character; for whereas ordinary uterine tissue is permeated by blood-vessels at all points, these fibrous growths have a vascular supply only on one side, or, in the cases of pediculated polypi, at one point, of their circumference. When the growths in question are found imbedded in ordinary uterine tissue (probably

the condition always present at first), they are generally enclosed in a sort of cavity, out of which they may be often shelled, so slight is the connection. The tissue of the growth is thus dependent for its nutrition and increase on blood-vessels proceeding to it from one side only. In a smaller number of cases the fibroid growth is continuous with the adjoining uterine tissue over a greater extent of its surface, and, under these circumstances, the shelling out of the tumour is not possible. The cases of *recurrent fibroid tumour* belong to a different category altogether from those now under consideration.

The ordinary fibroid growths of the uterus have this further peculiarity, that, although the production of new tissue within them proceeds often to a very considerable extent, yet that the growth is in a great degree dependent upon the state of functional activity of the uterus generally; for when the functions of the uterus cease, when ovulation and menstruation have come to an end, and the child-bearing season is over, then also further increase in the size of these growths is either nearly or completely arrested, and the tumour either remains *in statu quo* or becomes the seat of other changes. Such at least is the case when the patient's life is not cut short by constant hæmorrhages and losses of various kinds, consequent on the presence of the growths in question. Having attained a certain size, the fibrous growths of the uterus may undergo a variety of changes, some of which are less common than others. A spontaneous separation from the uterus—which in the case of a polypus is simply a separation of the pedicle, in the case of the fibrous tumour, a sort of enucleation—may take place; or the mass may undergo a softening process and subsequently separate; it may become converted into a fatty matter; or, lastly, may become hardened and cretaceous; and in each of the latter supposed cases separation may result. These changes are not often observed prior to the age of sexual involution.

The danger to life consequent on the presence of these growths in or about the uterus varies very much in different cases, and is connected almost entirely with the severity and intensity of the secondary symptoms. The most considerable source of danger lies in the oft-repeated hæmorrhages, the chronic menorrhagia, leucorrhœa, &c., present in bad cases, and in the exhausting effect of these on the constitution of the patient. In themselves these tumours are almost innocuous, but they may, when large, mechanically interfere with important functions of the body, and in that

way bring about a fatal result. The indications which the treatment is called upon to fulfil, therefore, necessarily vary in different cases.

The view taken as to the treatment in cases of fibroid growths in and about the uterus will vary according as the tumours to which they give rise are situated (*a*) so as to be accessible from the vagina; either lying partly out of the uterus or, at all events, being capable of being reached through the os uteri; or (*b*) when they are imbedded in the walls of the uterus, or hang pendulous from its peritoneal surface. Under the first head are included cases of very various character; thus the growth may be situated just beneath the mucous membrane of the uterus, forming a nodular eminence projecting into the cavity; or there may be a tumour, attached by a narrow pedicle to the inner surface of the uterus, and hanging down into the vagina, possibly even protruding beyond the vulva: between these two extremes we have all gradations. It is customary to regard those tumours as 'polypi' which are attached by a pedicle, those having no pedicle being spoken of as 'fibrous tumours.'

Respecting the treatment proper in these various forms of tumour, there is some difference of opinion, the main difference of opinion in question having reference to the advisability, or non-advisability, of attempting surgical relief in the cases of 'fibrous tumours.'

The most simple case is that in which there is a fibrous polypus pendulous in the vagina or projecting at the vulva, attached by a pedicle to the interior of the uterus. The only proper treatment in cases of this kind is, removal of the polypus. A whipcord ligature was formerly employed for the purpose of cutting through the pedicle of the polypus, the loop being passed round the pedicle and tightened by means of the well-known apparatus of Dr. Gooch. The pressure of the ligature caused the separation of the tumour in a few days, or longer when the pedicle was of considerable thickness. This method of procedure is now almost fallen into disuse. Dr. Robert Lee, however, appears still to adhere to the old method. Dr. McClintock, the latest writer on the subject of polypus uteri, argues very strongly against the practice of removing polypi by the ligature. In his own experience the only fatal cases were those in which the ligature was used. 'The use of the ligature alone, as a means of extirpating uterine polypi,' is, Dr. McClintock believes, 'destined ere long to become obsolete.*' The

* *Op. cit.* p. 179.

knife, the scissors, or the wire-rope *écraseur*, are now most largely employed. It has been found that when the knife or scissors are used the hæmorrhage is either very trifling, or very easily controllable; and by the use of the chain or wire-rope *écraseur* the liability to hæmorrhage is reduced almost to *nil*. The old plan is vastly inferior to the knife, scissors, or *écraseur*; for, unless the pedicle be very small, the whipcord ligature does not cut it through in less than two or three days, during which time the patient is subjected to the great inconvenience of having a semi-putrid mass lying in the vagina, and to the great danger of putrid absorption and consequent pyæmia. It is undoubtedly a matter of great importance to complete the removal of the polypus at once in all cases where it is found feasible.

In the choice of the particular instrument we must be guided by the circumstances of the case. In the case of a polypus with a pedicle the size of the shaft of a feather, it is quite immaterial whether we use the curved scissors, the polyp tome (a long hook, the concave side of which has a cutting edge), or the *écraseur* armed with chain, or wire, or wire-rope. Each operator will choose the instrument with the manipulation of which he is best acquainted. There is necessarily more danger of injuring the vagina when the scissors or the knife are used, but even this depends rather on the operator than the instrument. When the pedicle is larger than that above stated, the *écraseur* armed with chain, or wire-rope, is the best instrument, inasmuch as thus the operation is more easily effected, and there is less liability to bleeding. This latter method of cutting across the pedicle is applicable also in cases where the scissors or knife could not possibly be used owing to the position of the pedicle. The chain *écraseur* is applied with difficulty when the pedicle is thick, and here the wire, or wire-rope (as used in Dr. Braxton Hicks's instrument), is most valuable. The size of the rope must be increased in proportion to the thickness of the pedicle. A modification of Gooch's apparatus, made extremely strong, and capable of being used with any size of the wire-rope, is made by Messrs. Weiss, and promises to be very useful in cases where the polypus has a very thick pedicle, though I believe Dr. Braxton Hicks's instrument has been found an effective instrument in many such cases. I have seen Dr. Tyler Smith employ very successfully a strong copper wire tightened by a windlass on the Gooch principle* for the purpose of at once cutting across the pedicle. I

* Descriptions of Dr. Braxton Hicks's and Dr. Tyler Smith's instruments will be found in the *Obstetrical Transactions*, vol. iii.

have myself employed either the chain *écraseur* or the scissors for the removal of uterine polypi in cases of the foregoing description.

When the polypus has been removed the patient should be kept quiet for a few days, and in most cases it is advisable to give an opiate after the operation. The vagina should be cleansed by throwing up a gentle stream of tepid water once or twice a day, but it is improper to inject water either forcibly or in any considerable quantity. Should hæmorrhage occur after the operation, it will be easily controllable by a tampon.

In rare instances uterine fibrous polypi attain an enormous size before they are expelled from the uterine cavity into the vagina, and in such cases the mere size of the tumour creates a difficulty in reaching the neck of the polypus. Under these circumstances it has been found necessary to remove the tumour piecemeal; to cut away or remove as much of the tumour as can be reached at one operation, and to wait until the remainder is expelled lower down before again operating. For some cases illustrative of the difficulties met with in such cases, and of the manner in which these difficulties are to be overcome, the reader is referred to a paper by Dr. Elkington, of Birmingham, in vol. i. of the 'Transactions of the Obstetrical Society.'

The next cases we have to consider are those in which the fibrous growth is attached to the interior of the uterus by a pedicle, the growth itself, however, remaining still within the uterus. The os uteri may be found small or tolerably widely open. To Dr. Simpson is due the merit not only of first pointing out how the diagnosis is to be made where the os is found closed, viz. by artificial dilatation of the os uteri, but also of first practising the operation of removal of polypi from the interior of the uterus under these circumstances.* The thickness of the pedicle of the polypus may vary; the size of the growth itself also may vary; but as a rule we do not find that very large polypi attached by a narrow pedicle remain altogether within the uterine cavity; the more usual circumstance being that the os gradually expands and allows the tumour to fall wholly or in part beyond the os uteri. Where the pedicle is narrow, the operation for the removal of such polypi is not difficult, but it is more difficult than when the polypus is lying in the vagina. The removal of a polypus

* *Obst. Works*, vol. i. p. 128.

from within the uterus is quite feasible, and it is, in most cases, a proper operation. We may judge roughly of the thickness of the pedicle by endeavouring to twist the growth on its axis. If we decide on operating, we have to choose between the employment of torsion, and some one of the methods of excision above enumerated. Torsion has been employed in a very few cases, but the pedicle is rarely so small as to allow of its being attempted successfully. Knives of various forms have been contrived to cut across the pedicle; such as the polyptome of Professor Simpson, which is a kind of hook with a knife in the concavity. The instrument is introduced through the os, the pedicle embraced, and thus cut through. Curved scissors may be also employed, but the manipulations necessary are not very easy to perform if the os be narrow or unyielding. The wire or the wire-rope is best adapted for cutting across the pedicle, the only difficulty being the placing of the rope on the neck of the tumour. In order to enable us to perform the necessary manipulations, the os may require to be artificially dilated by tents, or preferably, as it appears to me, by the india-rubber dilators introduced by Dr. Barnes.

Another class of cases are those in which there is a fibrous growth developed in the substance of the cervix uteri, or one lip of the os uteri. These cases are not very common, but the tumour here situate may attain a great size. (See an interesting case related by Dr. Barnes in vol. iii. of the 'Obstetrical Transactions'). The treatment of such cases is identical with that applicable in cases of hypertrophy of the cervix uteri (see Chap. X.).

We next come to the series of cases, respecting the proper treatment of which there is some difference of opinion—those, viz., in which the tumour is, more properly speaking, a 'fibrous tumour,' the attachment to the uterus being either by a very broad base, or there being a complete absence of anything that could be termed a pedicle. The most manageable of such cases are those in which, although the basis of attachment is broad, yet the tumour itself is of a polypoidal shape. Such a tumour may project partially through the os uteri. The wire-rope *écraseur*, or the wire ligature, may be used to cut across such a tumour, even when tolerably high up. Various methods of treatment have been practised in cases where there has been no such polypoidal character of the tumour. Amussat incised the os and cervix, and then separated the tumour from the inside of the uterus by a kind of enucleation, or shelling out. This operation has been carried out

by others also. Mr. Baker Brown adopts a procedure* for the removal of such tumours which is based on the supposition that, when these tumours are partially broken up or disintegrated, as by cutting a piece out of the centre, they have a tendency to perish and separate spontaneously. This procedure consists in incising the os uteri freely, allowing these cut surfaces to heal over, and, having thus obtained access to the tumour, in gouging out a piece of the tumour, by means of a peculiar instrument designed for the purpose by Mr. Philip Harper. The gouging out is performed a week or two after the incision of the os, and it is repeated if necessary. A process of suppuration follows, the tumour softens and becomes discharged piecemeal. Such is the operation and its *rationale*, and cases are related by Mr. Brown in which the operation was successful. Dr. Hall Davis operated, in one case where the attachment was very considerable, by a combined process of tearing, the use of the ligature, and cutting.† My friend Dr. Sarell, of Constantinople, also overcame successfully the difficulties encountered in removing, by successive operations, a large fibrous growth coming under the foregoing category.‡ Dr. Tanner has recently contributed a valuable paper on the treatment of intra-uterine polypi, and has related cases in which operations were performed.§ The tumours were more or less polypoidal in character.

To all operations on fibrous tumours of the non-polypoidal form and shape, the objection has been made, and continues to be made, by many eminent authorities, that they are hazardous and unnecessary. On this question it is impossible to lay down a universal law: it cannot be said that it is impossible a case could arise in which the dangers of the operation would not be counter-balanced by the advantages derivable from its performance. These dangers are certainly very considerable: the risk of perforating the uterus, the inflammation of the uterus which may be set up, the pyæmic condition liable to arise from the cutting, the tearing, and prolonged manipulations which may be required to carry the operation to a termination—all these are evils not to be lightly encountered; but still cases may arise in which these dangers may appear to be lessened by the peculiar circumstances of the case, and in which, consequently, surgical interference with intra-uterine fibroid tumours, non-pedunculate and of considerable size, may be decided on, without any great impropriety at all events.

* *Obst. Trans.* vols. i. and iii.

† *Ibid.* vol. ii.

‡ *Gaz. Méd. d'Orient*, 1860, vol. iv. p. 2.

§ *Lond. Med. Rev.* July 1861.

If an operation be attempted, the preliminary of dilating or enlarging the aperture of the os uteri is important, a free escape of detritus being necessary. Whether incision or simple dilatation be resorted to, will depend on circumstances. The principle of removing one portion of a tumour in order to destroy the remainder is undoubtedly a sound one. Dr. Gooch was the first to allude to this, for he held that when a ligature was applied round the neck of a polypus, the part above as well as the part below the ligature perished. In some cases, however, the attachment and connection of the tumour with the uterus being considerable, little or no effect would be produced on the remainder by the removal of a part of the tumour. With respect to the manner in which removal of a part or the whole of a tumour should be effected, it appears to me advisable, in all cases where it is possible, to avoid the use of sharp-cutting instruments; both by reason of the greater danger of hæmorrhage and the greater liability to pyæmic affections which attend their use. Gentle tearing, or, where this is not practicable, the use of the wire-rope écraseur, may be substituted for the cutting or gouging instrument with advantage. Especial care must be taken to avoid the peritoneal surface of the uterus.

As a rule, removal of a polypus of the uterus is followed by complete cure, but when the polypus is of 'malignant' character, the disease returns. Cases of the latter variety are extremely rare (see p. 269).

The fibrous growths which are situate under the peritoneal surface of the uterus, or pendulous in the abdominal cavity, can but very rarely be considered proper objects for surgical interference. Occasionally they produce great inconvenience, as when, for instance, a large fibrous pendulous tumour falls down by the side of the os behind the uterus in the pelvis, and in such a manner as to impede delivery, the patient subsequently becoming pregnant. When this occurs, the proper treatment is to push the tumour above the brim of the pelvis, by careful manipulation in the vaginal canal. This operation I successfully performed quite recently in the case of a poor woman, a patient of the St. Mary's Hospital Maternity. Puncture of such tumours from the vagina has been practised under such circumstances with fatal results. In a case which I have already related (see p. 343), a mass of fibroid tumours growing from the outside of the uterus, caused retroversion of this organ, and remarkable distension of the bladder with urine; in this case, the tumours, together with the uterus, were pushed up

out of the pelvis, and the patient thus relieved. The inconveniences resulting from the presence of tumours of the kind now under consideration are hardly ever sufficiently intense to render justifiable their removal by surgical operation. Dr. Clay, of Manchester, whose boldness and success in abdominal operative surgery are unequalled, very lately brought before the Obstetrical Society of London a most remarkable case, which is an exceptional one in every sense of the word, and in which he removed the entire uterus, together with fibroid tumours growing in its walls, the whole forming a very large abdominal tumour. The case was that of a single lady; the tumour had been growing for some years, and for the last three or four years it had been growing in such a way as to fill up the pelvic cavity. Finally, the patient had become much emaciated, the tumour filled the pelvis so entirely that the finger could not be passed behind it, and there was not even room for the introduction of a bougie in front; and it being evident that life must be brought to an end by the impediment offered to defecation and micturition, it was determined to remove the tumour. Before the operation, the tumour was considered to be uterine, and the diagnosis proved correct. The entire mass, including the uterus and one of the ovaries, was removed, the uterine cervix being cut across just above the os. Two months subsequently the patient was alive and well, this being the only case in which such a formidable operation as the removal of the entire uterus has succeeded in England. Ordinarily, the effects of the presence of large fibroid tumours of the uterus in the abdomen are not such as to call for or to justify operative measures. In some such cases, the abdomen has been opened for their removal, under the impression that the tumour was of ovarian nature, and in some such cases the tumour has been excised, but generally with unfavourable results. Such cases are not fitted for operation.

General and Palliative Treatment in Cases of Fibrous Tumours of the Uterus.—We know of no means whereby the formation of these tumours can be prevented, and when they are of large size we know of no means—no reliable means, certainly—whereby they can be made to disappear, short of a surgical operation. But there is every reason for the belief that much can be done to diminish the rapidity of the growth of the tumour in certain cases, not always, but occasionally. The means on which most reliance can be placed are such as tend to diminish the supply of blood to the generative organs. Chronic congestion of the uterus is a con-

dition probably favourable to the development and growth of fibrous tumours, and by effectually treating this condition, good may thus be done. The use of baths, and cold vaginal injections, are therapeutic measures of exceeding importance in this respect. Rest in the horizontal posture during the menstrual period, due attention to the state of the bowels—all these are capable of effecting much, and it is probable that if we could only persuade our patients to systematically attend to the directions given, the effects produced might be considerable. The course of the disease is, however, chronic, and any one system of treatment is rarely carried out long enough to give its efficacy a sufficient trial. In many cases, even where we have succeeded in giving the patient a great amount of relief, it is difficult to satisfy ourselves that we have effected any considerable or even appreciable diminution in the size of the tumour. It is, however, encouraging to know that, by persevering attention, the progress of the growth of the tumour may be often checked.

The remedies which have obtained the greatest reputation as promoting the disappearance or preventing the growth of fibrous tumours of the uterus are, mercury, iodine, and bromine. The bichloride is usually the preparation of mercury employed; and it is given in small doses, extending over a considerable time. The remedy is undoubtedly useful in many cases. With reference to iodine, bromine, and the various preparations containing these ingredients, there is perhaps more to be said. Thus, the waters of Kreuznach have been largely employed in treating the affections now under consideration; they have been employed both internally and externally. The results obtained in many cases are decidedly encouraging, although the good effects have often been considerably overrated. The good effected in very many cases appears to be rather the removal of the morbid congestion of the uterus, and the improvement of the health generally, than any great diminution in the size of the fibrous tumour. And, indeed, it is probable, as has been already remarked, that if we can so far improve the patient, we do all that lies in our power—short, at least, of actual surgical interference. It is therefore no real disparagement of the Kreuznach water treatment, or other therapeutic measures of the same kind, to say that they may be expected to fail in actually removing fibrous tumours of the uterus. By administering the waters internally, by employing daily hip-baths and injections of the same, we obtain all the good effects. The conjoined use of bromine and iodine in the following manner may be

recommended :—The patient is to take, twice or thrice daily, bromide of potassium, beginning with one grain for a dose, while over the lower part of the abdomen an ointment containing iodide of potassium is rubbed in once or twice a day. At the same time, the other measures, baths, &c., must not be omitted. Following Dr. Rigby's recommendation, Dr. M'Clintock has given an extended trial to chloride of calcium (thirty to forty drops of the 'liquor calcii chloridi,' of the Dublin Ph., three times a day, in a bitter infusion), and in one instance its prolonged use was followed by a complete cure.*

The hæmorrhages dependent on the presence of fibrous tumours constitute a very important class of symptoms. The most severe forms of hæmorrhage attend the presence of polypus or polypoid growths. Where these do not admit of surgical treatment, and when the hæmorrhage is difficult to arrest, it has been lately recommended by Mr. Baker Brown to incise the os uteri, and it is stated that by this means the bleeding is checked. In his recently published work Dr. M'Clintock states† that M. Nélaton, Mr. Brown, and himself simultaneously made the discovery of the efficacy of the incisions in question. The question of the treatment of the hæmorrhage is often very closely connected with that of the adoption, or not, of surgical treatment. It generally happens that those cases in which the hæmorrhage is most severe, are precisely those in which operative measures are most easily carried out. The tumours which are most inaccessible surgically, and which grow near or upon the peritoneal surface of the uterus, generally occasion far less hæmorrhage than the polypoidal tumours. This circumstance enables us usually to come very early to a conclusion as to the necessity, or the reverse, for operative procedures, even before the diagnosis as to the exact seat and position of the tumour has been satisfactorily determined. With reference to the palliative treatment of hæmorrhage due to this case, tincture of cannabis indica is spoken highly of by Dr. M'Clintock as a remedy; in a case related by Dr. Tanner, mercury was the only remedy which had an effect in restraining the hæmorrhage, and the patient was more than once saved from death by its use.‡ The preparation given was the bichloride ($\frac{1}{8}$ of a grain every six hours). Further observations on the subject of the treatment of hæmorrhage, and which are applicable to these cases of fibroid tumour or polypus, will be found at pp. 454 *et seq.*

* *Op. cit.* p. 141.† *Op. cit.* p. 149.‡ *Obst. Trans.* vol. iii. p. 13.

Various other symptoms produced by the presence of fibrous growths in the uterus require attention. Pains very much resembling those of labour are frequently observed, and require mitigation by means of opiates. Such pains are often of good augury in the case of polypus, inasmuch as they have occasionally the effect of expelling the polypus from the uterus into the vagina, whereby the removal is facilitated. Micturition and defæcation are frequently very much disturbed by the presence of fibroid growths in the uterus, and it is often necessary to devise means for enabling the patient to obtain proper and regular action of the bowels. The bladder is less constantly affected by the presence of the enlarged uterus in such a degree as to render aid in the evacuation of its contents necessary.

SMALL MUCOUS OR CYSTIC POLYPI OF THE UTERUS.

The removal of these hypertrophies and growths from the mucous membrane of the uterus is not rarely required, on account of the hæmorrhage which they occasion. The speculum having been introduced, the removal is easily effected, with the aid of a pair of long-handled curved scissors. Dilatation of the os by means of tents is required in some cases, to enable us to reach these little growths.

FIBRO-CYSTIC TUMOUR OF THE UTERUS.

This disease has never, so far as I am aware, been diagnosed during life, but it has on more than one occasion been mistaken for an ovarian tumour. The growth of the tumour is limited to the external surface of the uterus, where it forms a mass resembling, in its form, its history, and in other respects, an ovarian tumour. The fibro-cystic tumour of the uterus has been successfully removed by an operation, the tumour having been considered ovarian. The operation for its removal is one attended with greater risk than that of ovariectomy; the extent of the connection of the tumour with the uterus must be a matter of uncertainty—even supposing the diagnosis made as to the nature of the tumour to be a correct one—and the risk to the patient would be, so far as can be judged at present, greater than in the operation of ovariectomy. The fibro-cystic tumour of the uterus is so rare, that we cannot expect to be able at present to lay down general rules as to the treatment.

CHAPTER XIII.

TREATMENT OF DISEASES OF THE OVARY.

Inflammatory Affections of the Ovary.

TUMOURS OF THE OVARY AND OVARIAN DROPSY.—Natural History of Ovarian Tumours and Ovarian Dropsy as Data for Prognosis and Treatment—Mode in which Life is destroyed—Complications with Pregnancy—Special Consideration of the Prognosis of Ovarian Dropsy—Examination of Dr. Robert Lee's and Mr. Safford Lee's Cases—**TREATMENT**—General Treatment; Ovariectomy; Statistics of Ovariectomy; Objections to the Operation considered—Indications and Contra-indications for the Operation—Description of the Operation—Tapping; Indications; Mode of performing the Operation—Tapping followed by Pressure—Tapping followed by Iodine Injections—Tapping from the Vagina—Some other Surgical Procedures.

THAT the natural exercise of the ovarian function—maturation and dehiscence of Graafian follicles—is liable to disturbance, and that 'ovarian folliculitis' must be admitted into our nosology, has been shown in the former part of this work. The remarks already made respecting the treatment of pain during menstruation, and of pain referable to the internal generative organs, render it unnecessary, however, to dwell at any length on the consideration of the treatment of *inflammatory* affections of the ovaries. The treatment of *acute inflammation* of the ovary, and some of its consequences, will be incidentally referred to in the remarks on the treatment of Pelvic Abscess.

The affections of the ovaries which possess most interest and importance in reference to treatment are, tumours of the ovaries, and the various conditions known under the term ovarian dropsy; the present chapter will be devoted to the consideration of the treatment of these affections.

THE NATURAL HISTORY OF OVARIAN TUMOURS AND OVARIAN DROPSY—THE DATA FOR PROGNOSIS AND TREATMENT.

It is necessary, before discussing the treatment of ovarian tumours and ovarian dropsy, to devote a short space to some remarks concerning the natural history of these affections, including

their mode of growth, and duration, also the danger to life, and the mode in which life is destroyed by them.

The rare *fibrous tumour of the ovary* is of slow growth, and comparatively harmless. It may give rise mechanically to a fatal result, by impeding in some way the due exercise of the functions of neighbouring organs, but this is uncommon.

The affections of the ovary to which most interest attaches are those of a *cystic* nature, and in which the disease is constituted by the presence in the ovary of cysts, or of cysts associated with solid matters of various kinds.

The *Wolffian cysts* are unimportant; they grow slowly, and do not exceed the size of an orange. The *dermoid or fat cysts* present peculiarities, rendering a separate consideration of them necessary. Their course is usually slow; they may exist for some years without increasing remarkably in size, but they appear liable at any moment to undergo changes of a character fatal to the patient; viz. inflammation, perforation, and rupture. The contents of these cysts, viz. fat, hair, teeth, or other matters, become evacuated into the intestines, into the peritoneum, or into the bladder, and the patient may perish from the effects of the mischief thus set up. Their contents very frequently have a puriform character, a circumstance which Dr. West considers explainable by the intimate relation subsisting between pus and fat globules. The result of injecting iodine into the interior of a cyst of this kind, in a patient under the care of Dr. Alex. R. Simpson, does not offer encouragement to the pursuance of a similar treatment in future.

The other varieties of cystic affection of the ovary (for an enumeration of which see p. 381) require a longer notice. In considering the pathology of cyst affections of the ovary, it was pointed out how great are the variations in respect to the number of cysts which may be affected with disease in a particular case, how variable also are the contents of these cysts. We have now to consider another circumstance connected with these cystic affections in which very great variability is observed, viz. in respect to the phenomena witnessed in connection with particular forms of cystic disease in different instances; particularly also in respect to the progress made by what appears to be the same disease under different circumstances. And it is this great variability which infuses to so great an extent the element of uncertainty into our speculations as to the future of particular cases.

In cases where there is *one large simple cyst* of the ovary, with

contents fluid, or semi-fluid, the course of the case will probably be as follows:—The cyst itself goes on increasing in size until it occupies the greater part of the abdomen, pushing the viscera of the abdomen upwards and backwards: the rate of increase may be fast or slow. It may remain in the pelvis, or it may leave this cavity altogether. The further history of this cyst will vary according as more cysts become developed below, or within, or upon it, or according as it remains single or the reverse. If no further development of cysts take place, this primary large cyst may go on slowly increasing in size, or, having arrived at a certain state of fulness, may remain quiescent, and the patient may live several years, suffering chiefly from the mechanical inconvenience and distress produced by the great enlargement of the abdomen. The walls of the cyst may become accidentally ruptured, and the contents effused into the abdomen, or into some of the adjacent viscera; and under these circumstances the patient may be killed thereby; and, such rupture having taken place, the cyst may go on secreting anew, or no such further secretion may take place, and a cure may be witnessed. The distress and distension may, at a comparatively early period of the history of the case, be so great as to call for surgical relief, e. g. tapping, and if tapping be performed, the cyst may refill again and again with great rapidity, the patient soon sinking from the effects of so great and continuous a loss. In some rare cases the disease has disappeared after one tapping.

The aspect of the case will also vary according to the relations of the tumour. Thus, if the cyst become fixed by adhesions in the pelvis at an early period, the mechanical difficulties thereby produced will be greater than where no such adhesions exist. And this circumstance has an important relation to the prognosis of the case, for the existence of the patient may, under such circumstances, be prematurely cut short by the disturbance of the renal secretion due to pressure on the ureter; such pressure giving rise to distension of the ureter and of the pelvis of the kidney. The functional disturbances of the other abdominal viscera are pretty much the same in cases of large cyst, whether the cyst extend into the pelvis or not.

The foregoing summary includes the principal features of one class of cases as they occur in practice, and it will at once be remarked how very variable is the course observed. It is impossible to ascertain positively what the future course of a particular case will be, although the previous history frequently affords valuable

hints on the matter. There is one circumstance in connection with these cases which appears to have received less attention than might have been expected, viz. the possible influence exercised by a large cyst already in existence in preventing the development of fresh cysts. Some apparent anomalies in connection with the results of the operation of tapping in cases of this kind, are in part explainable by admitting that an influence of this kind may be exercised. The operation of tapping has in many cases appeared to accelerate the fatal event; it is certain that the disease has advanced much more rapidly after its performance in a considerable number of instances. In a certain proportion of these cases the fatal event is connected with the rapidity with which the cyst refills after being emptied, but in not a few it would appear that other cysts start into activity which would probably have remained quiescent if the primary cyst could have been left undisturbed. The good results obtained in some cases recorded by Mr. Baker Brown and others, from the employment of tapping combined with pressure, are explainable on the foregoing hypothesis. The following sentence from the work of Dr. Farre may be quoted as bearing on this question:—‘The structure and situation of the ovary permit this organ to suffer a degree of distension which is rarely or never equalled in other parts. Probably the only limit to the increase in size of the morbid ovary after it has risen out of the pelvis into the abdomen, is occasioned by the pressure which the spine, diaphragm, and abdominal walls exercise upon the cyst, for the parietes of an ovarian cyst appear in most cases to possess an unlimited capability of multiplying the fibrous element of which they are principally composed, whilst the power of rapidly replacing the fluid after their contents have been drawn off, proves both the unrestricted capability of secretion inherent in the cyst walls, and at the same time the influence which pressure exerts in keeping that secretion for a time within certain limits.’ *

An element of an unfavourable kind in the prognosis of a case where there is only one large cyst of the ovary, is the rapidity with which that cyst fills or refills after being tapped; danger from this tendency to refill is one less in degree than another which is to be feared at some future time, viz. the starting into activity and growth of other cysts; and there can be no question that, short of a radical cure, the restriction of the disease to one large cyst is one of the best results to be looked for. A careful survey of

recorded facts appears to warrant the conclusion that the tendency to cyst formation in the ovary is often temporary, apparently exhausting itself in the production of one large cyst. Thus, supposing that the tendency to new cyst formation has in a particular case been arrested, the patient is less likely to succumb to this disease. The patient may still die from the perpetual drain on her system, caused by repeated refilling and evacuation of this cyst, or in some one of the other ways pointed out. But at first, and indeed for a very considerable time, it is always difficult to say whether the arrest alluded to has occurred.

Compound Cystic Tumours.—The class of cases now to be spoken of are those in which the tendency to cyst formation is, it may be from the first, not limited as above, but where there is a successive production of cysts within, or upon, or below, those first formed. The cysts may grow with excessive rapidity, and the whole abdomen may very quickly become filled. This may occur either primarily, so to speak, or one or two large cysts only having for some time existed, the abdomen becomes suddenly and alarmingly invaded by a multitude of new growths. The prognosis of cases of the kind now mentioned is, as appears from many recorded instances, very unfavourable. It is so bad, indeed, that Dr. Bright was accustomed to use the term ‘malignant’ in describing such cases. The use of the word ‘malignant,’ so applied, is liable to lead to misconception, this term being now more generally limited to cases where there is actual cancerous substance present. In the cases now under consideration there is not, necessarily, any cancerous formation at all, the fatality depending more on the mechanical interference of the ovarian tumour with the functions of life than on that general constitutional affection which is witnessed in cases of cancer. When we find an ovarian tumour suddenly take on rapidity of growth, and are able to satisfy ourselves that this increase in size is not due to simple enlargement and distension of one or two previously existing cysts with fluid, the case is assuming a very threatening aspect. If the tumour become more irregular to the feel, if the fluctuation become indistinct while the tumour is evidently growing fast, these are facts confirmatory of the supposition that the tumour is the seat of rapid and extensive cyst formation.

Composite Tumours.—Another class of cases have now to be spoken of, in which there is formation of a considerable amount of solid matter, together with cystic disease of the ovary, there being

simultaneously production of cysts and of the solid matter in question. Such cases often proceed with exceeding rapidity, and their prognosis is bad, the patient being generally killed with a rapidity commensurate with that of the increase in the size of the tumour. Cases are sometimes met with where, at a very advanced stage of the disease, no further increase in size appears to take place.

Lastly come those cases where the ovary, either previously the seat of cystic disease or not, becomes affected with *cancerous disease*. The prognosis in such cases is almost identical with that of cancer in other parts of the body. It is, however, more difficult to diagnosticate their nature. Perhaps it would be more correct to say that the difficulty lies rather in diagnosing the absence of cancer; and this is important, as the prognosis will be widely different in the two cases. The disease termed 'alveolar cancer,' or pseudo-colloid disease, does not appear to be entitled to rank with cancer, and, so far as the prognosis is concerned, the facts seem to show that a patient with 'alveolar' disease of the ovary is not necessarily doomed to death. In ordinary cancer of the ovaries, the prognosis is necessarily of a gloomy character, the disease spreading from or to the adjacent organs, and soon destroying the patient.

The *manner in which ovarian dropsy kills*, varies excessively in different cases. It is in many instances a slow production of death by exhaustion consequent on repeated drains from tapping. It is due often to intercurrent, slight affections, which would have produced little effect in a healthy individual. Thus, when the breathing is mechanically restricted, a slight inflammation of the lungs may rapidly prove fatal. In ordinary advanced cases of the disease, the mechanical disturbance of the functions of the great viscera—the heart, the liver, the kidneys (as by pressure on the ureters), the stomach, &c.—gives rise to various alterations which directly and indirectly impair the vitality of the individual. Restricted as to her food, restricted as to her capability of moving about, suffering from frequent nausea, sickness, prevented from sleeping, tormented by pains and inconveniences too numerous to mention, the sufferer from advanced ovarian disease presents a most lamentable spectacle. The condition of the patient is often the more painful, as it is quite evident that the other organs of the body are sound, and that, apart from the ovarian disease, there is nothing materially wrong.

The patient may be killed by rupture of the cyst, by inflamma-

tion of the same; in compound cysts, by inflammation consequent on softening and breaking down of the septa between the different cysts. Hæmorrhage into the cyst cavity is another accident which may occur. Each and any of these events may lead to a fatal result, but they may also, and do occasionally, bring about the cure of the disease. The rupture of the cyst is an event which is not very rare; the cyst may burst into the peritoneal cavity, or into any of the adjoining viscera, or it may perforate the abdominal wall. Such rupture is often the result of a blow, a fall, or an accident of some kind. When the fluid escapes into the peritoneal cavity, excessive diuresis generally occurs, and the size of the abdomen lessens. This rupture may kill the patient, as before remarked, but it has in a few recorded instances resulted in cure.

The *relation of ovarian tumours to pregnancy* requires a word or two in this place, the more especially as this is a matter which has scarcely received the attention it deserves. It appears from the cases which are on record, that it is highly dangerous to a woman affected with an ovarian tumour to become pregnant, not only on account of the difficulties likely to attend the process of gestation and parturition, and which are of a mechanical nature, but also from the fact that ovarian tumours are liable to undergo, during pregnancy or immediately after delivery, a softening or inflammatory process, which is attended with great danger to the life of the patient. The existence of ovarian dropsy should therefore be held as an almost absolute bar to marriage. Correspondingly, where it is very desirable that marriage should take place, the arguments in favour of radical treatment will assume a greater importance. I am, however, acquainted with the particulars of a case in which a woman has borne well and easily five children, having had a large cystic tumour of the ovary during the whole period—a tumour which is now so large as to reach nearly to the knees.

From the foregoing account of the natural history of ovarian disease, it will have been made evident that in different cases of ovarian tumour very different terminations are to be expected; and further, that it is possible, in some instances, but not in all, by careful attention to the facts and peculiarities of the case before us, to form an opinion as to what the future of the case will be. The question which it behoves us most seriously to consider is, what result may be expected to occur in particular cases; what probability there is that the patient will survive the disease for a

given time—what, in fact, are the chances for or against the patient's life. The most conflicting opinions prevail on this subject. The interest felt attaches for the most part to the prognosis of cases of ovarian dropsy or tumour in which the tumour is as large or larger than the head of a child, because these are the cases concerning which our advice and opinion are most frequently requested.

What, then, is the natural termination of these cases, if left to themselves?

It is exceedingly difficult to get facts to throw a light on this subject. We know well enough that there are cases in which women live almost or quite the natural term afflicted with ovarian dropsy; we know also that many are killed by the disease, its duration being very short indeed. But how many live with ovarian dropsy, how many die from its effects?—these are the questions to which we desire an answer. It is obvious that the desired information can only be obtained by examining the records kept of all cases, indiscriminately, of ovarian disease. We do not require simply the 'extraordinary' cases, but the ordinary ones. In the work of Dr. Robert Lee, entitled 'Clinical Reports on Ovarian and Uterine Diseases,'* will be found some materials of this kind. Dr. Lee's facts possess this value—that they are the experience of one individual, a well-known and accurate observer, and extending over a considerable number of years. Dr. Lee gives clinical reports of 180 cases of 'ovarian' disease, which I have analysed for the purpose above mentioned, and with the following results:—

Of these 180 cases there are 44 only which are available for the present purpose. The others cannot be used, for one of the following reasons:—the facts related concerning them do not conclusively indicate the *ovarian* nature of the tumour; or the case is defective, inasmuch as no result is given, and it is impossible to say whether the patient died or recovered; or the ovarian tumour found to be present was so small that the case does not come within the category now under consideration.

These 44 cases ended as follows:—

In 32 of the cases a positively fatal termination is recorded as having occurred, these cases having been either allowed to pursue their course unchecked, or tapping having been performed; in 22 of these cases only are data furnished as to the time the patients

* Churchill: Lond. 1853.

lived. The average duration was 1·9 year, that is to say, on the supposition that 'rapidly fatal' means fatal within one year. In one the inference is that the patient died; in one the inference is doubtful, but the probability is that it ended fatally; in three the patients were apparently in a dying state, or the disease was proceeding rapidly to a fatal termination.

On the other hand, we find that in one case the disease did not reappear for twenty-six years; in one but little progress had occurred in three years; two patients were alive after a period of two and three years respectively; two patients died from ovariotomy; one died from the effects of an exploratory puncture.

We may thus range the 44 cases into two series, in the first of which will be placed the cases absolutely fatal, in the second those in which a fatal result did not occur, or where, if it did occur, it was due to a non-natural cause.

On the most favourable interpretation of individual cases, it thus appears that 84 per cent. of these cases died, and, so far as the majority of these are concerned, the death occurred within two years.

On the other hand, in 16 per cent. of the cases an opposite result ensued, or there is at all events no proof that such an opposite result might not have ensued. It is natural to conclude, however, from an examination of the above list, that 16 is a very high figure, and that, had all these cases been allowed to pursue their natural course, the actual percentage of favourable results would have been nearer 10 than 16.

The general conclusion deducible from Dr. Lee's cases is that, taking the case of a woman, the subject of 'progressive' ovarian tumour or dropsy, to the extent contemplated in the above-mentioned category of cases, the chances are as ten to one that the case will end fatally in less than two years, the disease being left to itself, or palliative measures only, such as tapping, being employed.

Mr. Safford Lee, who was the first to examine the question now at issue statistically, collected 131 cases with the view of ascertaining the duration of ovarian dropsy under *ordinary* treatment. In 123 of these cases the duration was mentioned.*

In 38 the duration was 1 year	In 5 the duration was 6 years
" 25 " " 2 years	" 4 " " 7 "
" 17 " " 3 "	" 3 " " 8 "
" 10 " " 4 "	" 17 " " from 9 to 50
" 4 " " 5 "	

* *On Tumours of the Uterus*, p. 117.

It thus appears that in 76 per cent. (94 out of 123) the duration was under five years. But it is necessary to analyse more fully the data in question, in order to compare them properly with those afforded in Dr. Robert Lee's cases. It is more satisfactory, as before remarked, to have the whole experience of *one* individual. In Safford Lee's table we find 20 cases of Dr. Kilgour's; of these 20 cases 17 died in three years and under, viz. 85 per cent., a figure very closely approximating to that obtained from Dr. Lee's cases. In 12 cases reported by Dr. Ashwell, 9, i. e. 75 per cent., died in the same period—three years and under. In 10 cases reported by Mr. Safford Lee himself, 9, i. e. 90 per cent., died within three years. The experience of one reporter, Dr. Macfarlane, was more favourable, for of 14 cases reported by him the duration was four years or under in 4 cases, and of the other ten four survived 12 years and four as long as 16 years. Dr. Macfarlane's experience would seem to have included a larger number than usual of exceptional cases.

As a guide to actual results, which may be expected in practice, the cases of Dr. Robert Lee, and the particular cases just referred to as contained in Mr. Safford Lee's tables, are worth more than those collected from various sources, for reasons already stated. Such cases as those in which it is recorded that the disease lasted 20, 30, or even 50 years, do undoubtedly occur; much mischief has resulted, however, from looking on such cases as the typical ones, while the large majority of the cases, the end of which is naturally death in a much shorter time, have been considered as the exceptional ones.

Taking everything into consideration, we shall not be probably far wrong in drawing from Dr. Lee's and from Mr. Safford Lee's cases the conclusion that the probable duration of a case of ovarian disease of progressive character is, in 85 to 90 per cent. of the cases, two or at the most three years; of the apparently 'stationary' or chronic cases, the prognosis is more favourable, but in such cases the disease is liable at any moment to start into fresh activity.

The foregoing observations give some idea—an idea which cannot be very wide of the truth—as to the nature of the evil we have before us when a patient presents herself with ovarian dropsy. The first question we naturally put to ourselves with a case of the kind to decide upon, is, does this case belong to the fortunate series, the 10 or 15 in the 100, or is she one of the 90 who must die in the course of two or three years, if unrelieved?

It must be confessed that at present we have, as a rule, no means

of enabling us to decide—at an early period of the growth of the tumour, and when the tumour does not exceed six or seven inches in diameter—what the future of the case will be. In some few cases the cancerous nature of the tumour is obvious at an early period; in some few cases, also, the great unevenness and irregularity of the surface point to the presence of several cysts—a circumstance indicative for the most part of rapid growth—and these cases lay open their future before us more quickly; but in the large bulk of cases it is not so. We generally have to wait until the tumour has grown to a larger size before we are able to say much as to the prognosis, and it is the rapidity of growth, taken together with the nature of the growth itself, which then guide us to an opinion.

So long as a tumour, which is smooth externally, and apparently composed of a single cyst, continues tolerably quiescent, increasing but slowly, and without evidence of formation of fresh cysts (for the determination of which, examinations must be made from time to time), so long our prognosis will be tolerably favourable, and we may expect that the case will prove to be one of the fortunate ‘10 per cent.’ series. Rapid increase, new formation of cysts, addition of solid matter to the tumour, addition of ascites, increased pressure signs in the pelvis, rapid refilling after tapping—all these are signs of bad augury, and should induce us to place the patient in the unfavourable series, and to act accordingly.

THE TREATMENT OF OVARIAN TUMOURS AND DROPSY.

Of late years much attention has been given to the extension and improvement of surgical procedures for the treatment of ovarian tumours of various kinds, and certain conclusions may now be drawn which the state of our knowledge on the subject some few years since could not have warranted. It must be admitted, however, that while much has been done in the way of improving and perfecting the surgical procedures in question, but little advance has been made in the other direction. We seem to be almost absolutely powerless in the matter of prevention. Admitting to the full the great benefits which have been conferred on individuals by the successful performance of operations for radical cure, the necessity for having recourse to them, admitting this necessity, must still be deplored. Meanwhile, however, we cannot but congratulate ourselves on the progress which has been effected, and on the increased safety and facility with which these serious operations have been of late performed.

On the whole, the best method of dealing with the subject now before us will be to consider the several methods of treatment, one by one, pointing out the advantages and disadvantages attaching to each respectively.

THE GENERAL TREATMENT.—Past experience does not give encouragement for the belief that much benefit is derived in cases of *ovarian dropsy* from any particular remedies. Iodine, bromine, and their compounds, are agents which have been most often exhibited of late years. Iodine has been applied externally also. It has not been shown that any great amount of benefit has been derived from their use, but in the early stage of the affection it would be desirable to give them a trial. It is extremely doubtful whether we have any one drug from which much can be expected; but it does seem reasonable to suppose, and it is in accordance with experience, that by attending to the general health of the patient, enforcing observance of rules as regards diet, exercise, and regimen generally, a favourable influence may be exerted, and possibly the onward progress of the case stayed. Under any circumstances, it would be proper to lay particular stress on this element in the consideration, and the more so if we found, on enquiry, that the general health had been, for some time previous to the appearance of the disease, in a defective state. There would, in such a case, be a possibility that by correcting what was wrong a double good might result. It is a legitimate ground to go upon, at all events, and it may therefore be laid down as a general rule, that, whether operative measures be adopted ultimately or not, we should in the meanwhile enquire minutely into the particulars of the life of the patient, her habits, food, &c. Such remedies should be administered as will assist in restoring the impaired health. Iron, quinine, or other suitable tonics, will frequently be required. The condition of the bowels must be regulated, and mild laxatives administered if necessary; injections are often required in cases where there is a pelvic ovarian tumour present, the tumour sometimes pressing on the rectum and preventing defæcation. In cases where the disease is far advanced, where operative measures are, from whatever cause, inadmissible, the palliative treatment must be adapted to the circumstances of the case. The great difficulty is generally to carry on the digestive process, there being often great irritability of the stomach and inability to take food. The food administered must be of the most nutritive and easily digestible kind.

OVARIOTOMY.—It is unnecessary here to enter into any historical

detail of the operation beyond stating that, first suggested by William Hunter, it was first performed in America, and has proved most largely successful in England. It consists in excising the whole of the diseased ovary, an incision for this purpose being made in the abdominal parietes: the operation itself will be more minutely described presently. The results obtained by operators of late years have been very much more favourable than was the case a few years since, and it may be said that, with a few exceptions, the most eminent physicians and surgeons in this country now look on ovariectomy as a legitimate and necessary operation, under certain circumstances.

Like other operations, ovariectomy has been very successful in the hands of some, and has failed lamentably in the hands of others, and there are reasons for believing that in several cases ovariectomy has been performed unsuccessfully, no account of the cases in question having been published. We have, however, published statements as to the results of the whole practice of several operators which are abundantly sufficient to show what may be done with the operation in good hands.

It has been argued that, in order to estimate aright the value of ovariectomy, an account of the whole of the operations, however and whenever performed, is necessary. It will be sufficient, however, if, in drawing deductions, we have regard to operations performed by gentlemen who have published their *whole experience*.

The results of the experience of those gentlemen who have performed the operation most extensively of late years in this country, whose results, consequently, have the most direct bearing on the subject under consideration, will be now given. The following table includes the results of operations performed, so far as I can learn, up to the present date * (September 1863):—

Name of operator	Total number of completed operations	Cures	Deaths
Mr. Baker Brown . . .	58	32	26
Dr. Clay	107	73	34
Mr. Jonathan Hutchinson . .	7	4	3
Mr. Lane	11	8	3
Dr. Tyler Smith	19	15	4
Mr. Spencer Wells	74	49	25

The average percentage of cures will be found to be 65; the highest and lowest percentages being 55 and 78 respectively.

* The above particulars have, with one exception—that of Mr. Hutchinson—been kindly furnished to me by the respective operators themselves.

This is very satisfactory. If the results of recent operations only, that is to say, of operations practised within the last four years, had been given, it would be seen that a cure was effected by those who have operated most largely—Mr. Baker Brown, Dr. Clay, Dr. Tyler Smith, and Mr. Spencer Wells—in considerably over 60 per cent. of the cases. This result may be compared with that of cases of ovarian dropsy left to themselves, from which comparison it will be seen, that of 100 individuals coming before us affected with progressive ovarian cystic disease, 90 may be expected to be dead within two years, if nothing beyond palliative measures be adopted; out of the same number, from 60 to 70 may, by ovariectomy, be saved, and saved permanently, from death. The operation of ovariectomy has this peculiarity, that it almost absolutely cures the patient, the only possible drawback being—what is shown to be an exceedingly rare occurrence—the possibility of the other ovary becoming affected subsequently. When the ovary is affected with cancerous disease also, ovariectomy will not be of permanent benefit.

There is probably scarcely any subject on which there has been more discussion than that as to the propriety and admissibility of ovariectomy; and, unfortunately, the question has not always been temperately argued. After all, it is one which must be mainly decided by facts, and the facts adducible at the present time do really show at least this—that ovariectomy is, under certain circumstances, an admissible operation. The valuable statistical account of ovariectomy published by Mr. Clay, including all cases of which he had been able to obtain particulars up to the year 1860, gives the following results:—

In 212 cases of completed ovariectomy the operation was successful.

In 183 " " " " " " unsuccessful.

In 24 cases partial excision was performed: 10 recoveries and 14 deaths.

In 13 cases an operation was performed, but extra ovarian tumours only were removed: 3 recoveries and 10 deaths.

In 82 the operation was begun, and abandoned on account of adhesions; of these, 58 recovered from the operation, and 24 died.

In 23 cases ovariectomy was attempted, but abandoned in consequence of the disease being extra-ovarian.

These statistics of Mr. Clay's include a number of operations undertaken at various times and in various places, and with very numerous drawbacks, want of knowledge as to diagnosis and treatment, &c., and they do not in any way represent the state of the operation as it now stands; but, taking even these 395 cases of completed ovariectomy as they stand, it will be seen that 53 per

cent. were saved, and cured of a disease which would have left alive only about 10 or 15 per cent. at the end of two or three years; that is to say, assuming the correctness of the calculation as to duration of life under these circumstances previously made (see p. 585). On the other hand, we have, it is true, 47 per cent. killed by the operation itself, concerning which it is to be said that nine-tenths of them lost a chance of living about two years longer by submitting to the operation; and one-tenth lost a chance of surviving a longer period than two years. So far as is possible, this is putting the case fairly.

As already shown, the results of operations performed in England of late years are even more favourable. On the whole, the present aspect of the operation warrants us in taking 65 as the percentage of cures which may be expected when the operation is undertaken by experienced operators; and, substituting this figure for 53, which expresses the results of Mr. Clay's statistics, the case stands thus: In a case of ovarian cystic disease, the chances of recovery after ovariectomy are as 65 against 35, taking one case with another.

There are some other circumstances to be considered in reference to the operation. It is not always possible to complete it—adhesions interfering with the removal of the tumour. In the 537 cases tabulated by Mr. Clay, of operations of all kinds, in 82, or 15 per cent., this difficulty occurred. This percentage will probably be considerably lessened with advancing knowledge; and the failures to complete the operation have not, I believe, exceeded 10 per cent. in the experience of recent operators. We may, therefore, accept 10 per cent. for the present. The risk of immediate death which the patient runs from an attempt thus frustrated, amounts, taking Mr. Clay's statistics, to this—that in 29 per cent. of these failures death results. And it may be expected, therefore, that in about one-third of the cases where an operation is begun but abandoned, a fatal result will ensue within a short time after the operation.

We have also to consider the operation of ovariectomy in connection with possible mistakes in diagnosis, for if it be not always possible to make a correct diagnosis, this must be considered in recommending an operation which may fail, and which so failing may nevertheless kill the patient. If we turn to Mr. Clay's statistics, we find that the number of mistakes in diagnosis is very considerable. Thus, in 36 cases out of the total 537 operations, the tumour was extra-ovarian. A careful scrutiny of the facts

as to these cases shows, however, that in most of these the mistake was such as would, with our present knowledge as to diagnosis, be avoided. It may not be always possible to be absolutely certain that the tumour is what we believe it to be—a cystic growth from the ovary—but, by exercising the necessary care in arriving at a diagnosis, it is probable that the importance of this element in the consideration will be very greatly diminished.

Next, it will be proper here to consider briefly and dispassionately the arguments which have been brought forward against the operation of ovariectomy.

It is urged that women may live a long time with palliative treatment. The value of this argument is tested by reference to the natural history of ovarian disease. The argument only holds good in respect of cases where the disease is evidently not of progressive character, and such cases would not be considered cases for ovariectomy. Although in individual instances life is prolonged even under apparently unfavourable circumstances, yet what we have to consider first is the fate of the bulk of the cases which present themselves for treatment (see the analysis of Dr. Lee's cases at p. 583), and how that fate is to be averted.

It is urged, also, that the diagnosis is difficult, and that it is at times impossible to say whether a tumour be ovarian or uterine. This is only an argument for increased attention to the subject of diagnosis. Serious mistakes need occur but very rarely.

In the next place, it is urged that ovariectomy is really a more dangerous operation than the published statistics prove. This statement is met by the statistics of several well-known and well-credited operators, showing that the operation is really a very successful one in good hands. To what extent it is a successful operation, as now practised, has been already shown (see p. 588). Further, there is every reason for believing that the mortality will yearly become less, and that *dernier ressort* operations will become fewer and fewer in number.

The most important arguments used against the operation are those of Dr. West, in his very impartial and elaborate analysis of the subject. These must now be considered.

To Dr. West's first argument, that the rate of mortality from ovariectomy is not decreasing (the date of this statement is 1858), it is sufficient to reply that late experience does not sustain it, and that, on the contrary, the mortality is decreasing. In proof of this, Mr. Baker Brown's experience is very instructive. The

percentage of success obtained by this operator was formerly 31; the percentage of success in later operations has been 65. The next argument of Dr. West is, that the operation is most successful when the disease is advancing tardily, or where it has become stationary. Of late, it has been shown that recovery has frequently followed in the very worst cases; and, on the other hand, death occasionally results when everything seems to promise a successful result. There is no proof that a fatal result is necessarily connected with any particular condition of the patient whatsoever.

Further, Dr. West urges that, in the cases apparently most favourable for operation, it is a venture, and that we cannot give in any case a sure prognosis. This is undoubtedly true; the operation is a venture, but a venture less considerable than it was, and one which it can be demonstrated by figures, it is to the advantage of the patient to run, under certain circumstances.

There is another objection mentioned by Dr. West, viz. the uncertainty which exists as to the possibility of performing the operation. 'There is no other operation in surgery,' says Dr. West, 'concerning which the chances are nearly one in three that some unforeseen difficulty will prevent its completion.' The proportion, 'one in three,' of failures to complete the operation, is, judging from Mr. Clay's statistics, too high, i. e. excluding cases in which the diagnosis was wrong, and in which the operation was for this reason not completed; and reasons have been already given (see p. 590) for concluding that the percentage of failures to complete the operation may now be taken as about 10. And lastly, since the date of these remarks by Dr. West (1858), it cannot for a moment be denied that much has been done to remove the operation of ovariectomy from 'its place by the side of those exceptional proceedings, the expediency of which must be determined by each one for himself, after a careful consideration of the peculiarities of the case and the idiosyncrasies of the patient.'

Finally, the argument used by Mr. Erichsen at the late meeting of the Royal Medical and Chirurgical Society, at which Mr. Wells's paper on ovariectomy was discussed, may be adduced on this important question. 'It is old and trodden ground,' says Mr. Erichsen, 'to compare ovariectomy with the result of the operations for hernia, ligature of arteries, &c., and in these cases also the comparison is scarcely fair, as these are operations of necessity, whilst ovariectomy is an operation of expediency, and not of immediate and imperative necessity. But compare it

with "amputations of expediency" of the lower extremity. He would take for this purpose the statistics of a most able paper published two years ago in the "Transactions" of this Society, giving the results of amputations performed in one of the largest hospitals in London—Guy's. In that paper Mr. Bryant stated that the mortality after amputation of the lower extremity for tumours was 36 per cent., and the mortality after "amputations of expediency" of the leg was 68 per cent. Compare this result of amputations performed under the most favourable circumstances, by men of the greatest skill and judgment, with those of ovariectomy, and the advantageous position of the latter operation is at once seen.*

With the aid of the facts and conclusions just stated, we may next consider the *indications for ovariectomy*. The average opinion among those in favour of this operation may be stated as being to the effect that when the ovarian tumour is growing fast, and when, by reason of this or in some other manner, life is threatened at no distant period, the operation is to be recommended. But it is necessary to be more explicit. If our examination convinces us that the tumour is of cystic nature, that it is growing fast, that it is made up of three or more cysts, and the general health is threatened, this seems a case for ovariectomy. Equally so if the tumour be partly cystic, partly solid, this solid matter not being cancerous. The alveolar tumour of the ovary falls under the same category, and also cases of dermoid or fat cysts 'progressive' in nature. But if the ovarian tumour be simply fibrous, this is scarcely a case for ovariectomy. An operation may possibly be justifiable in such a case, but scarcely on the ground that life is threatened by the presence of the tumour in question.

Upon the next class of cases it is more difficult to pronounce an opinion. They are cases in which there is only one cyst in the ovary, or possibly two, and the disease is not strictly a progressive one; or, at all events, this quality of it has not yet declared itself. It is quite clear that, in very many such cases, ovariectomy is not called for, but there are cases in which good reasons might be given for preferring to recommend ovariectomy; viz. where there is rapid formation of fluid requiring frequent tapping, and threatening life in this manner. A tendency of this kind is hardly less destructive to the patient than the tendency to rapid formation of other cysts. The arguments for ovariectomy in cases where

* *Lancet*, vol. ii. 1862, p. 688.

the 'badness' of the case falls short of that just spoken of, are, that the earlier the operation is performed the safer it is, and the less risk also that the operation will be interfered with by the presence of adhesions. The difficulty experienced in deciding as to what is the best thing to be done in individual cases is one which cannot be got over by any amount of generalisation on the subject, and in a doubtful case small things turn the balance.

Another class of cases in which ovariectomy might be performed, are those in which, although the case is not a 'favourable' one for operation, the disease is so far advanced that the patient must otherwise certainly die soon, and where the operation might possibly save life.

It will be observed that the indications for ovariectomy chiefly resolve themselves into two—the necessarily progressive nature of the disease, pathologically considered, and the presence of such marked failing of the general health as to show that from radical measures only good can be expected. There is a special class of cases, as pointed out by Dr. Tyler Smith, in which patients insist on the performance of the operation, the idea of a possible operation looming in the distance being, to them, more intolerable than the present risk.

The Contra-indications.—The first contra-indication is 'difficulty of performance,' a difficulty which it is often, but not always, possible to foresee. This difficulty arises from *adhesions*. The diagnosis of the presence of adhesions is sometimes quite impossible to make, but, on the other hand, it is to be borne in mind that, in some cases, the presence of very extensive adhesions has not been found an insuperable difficulty in the way of the performance and completion of the operation. When a portion of the tumour is in the pelvis, we may often ascertain whether adhesions are present or not, by pressing the tumour upwards from the vagina, and by the mobility or otherwise of the tumour thus found to exist. Mr. Wells suggests that the tumour should first be tapped, and pressure then made from below, in order to ascertain the presence or absence of this mobility. But it is to be remarked that the shape of the lower part of the tumour might prevent its being thus moved from below, adhesions being quite absent. A careful examination through the abdominal walls may show that there is mobility of the tumour; this indicates absence of adhesions. Again, as pointed out by Mr. Baker Brown, the skin can be grasped and separated from the tumour if adhesions be absent. These signs, however, for the most part

affect the diagnosis of presence of adhesions *anteriorly*. The intestines are liable to contract very close adhesions with the tumour in long-standing cases, and these adhesions are posterior. Respecting existence of posterior adhesions, the results of examination are not conclusive. Practically, I believe the question as to the presence or absence of adhesions is one which must frequently remain unanswered until the operation is begun. Adhesions may be expected in cases where the patient has been repeatedly tapped. *Anasarca* of the lower extremities is justly regarded by Mr. Spencer Wells as not necessarily a bar to the operation, for, as he observes, it may depend solely on mechanical pressure of the tumour. I have myself seen very marked œdema of the lower extremities, from the presence of retroversion of the uterus, together with extreme distension of the bladder. When it is dependent on associated disease of the kidneys or other viscera, or on cancerous disease, œdema is undoubtedly a contra-indication. And the remarks of Mr. Wells in reference to *ascites* are equally to the point. If the ascites be an ascites mechanically produced, it is of less consequence. In the case of a small, *recent* ovarian tumour, where there is a good deal of ascites, the operation is contra-indicated, because there is a greater probability of the disease being of cancerous nature. It not unfrequently happens that there is much ascites and a very large tumour. In such cases, as a rule, the ascites is no obstacle whatever to the operation; in some respects it is an advantage, as adhesions are less likely to interfere.

Mr. Baker Brown says, on this subject, 'My experience teaches me to be more discriminating in the selection of cases for this operation, and to reject those where the health is very much broken down, when the drain of albuminous matter by repeated tapping has been great, when the disease is of a colloid nature, or otherwise materially departs from the true cystic character, and when, from the habits of the patient, other organs have suffered organically, to the serious detriment of their functions. Indeed, in cases of the description indicated, operative interference appears entirely contra-indicated.*' It is to be remarked, in reference to these restrictions laid down by Mr. Brown, that they are undoubtedly very much to the purpose if the success of the operation alone be considered, and they offer an important addition to the arguments in favour of 'early' operation. To act implicitly

* *On Ovarian Dropsy*, p. 265. London: Davies. 1862.

on these recommendations would be, however, to shut out from some patients, who might be cured, the possibility of such cure, and, as before remarked, there is a class of cases in which the operation is justifiable as a *dernier ressort*. Mr. Brown is in favour, as may be surmised from what has just been stated, of early operations. This is a point on which, however, it seems hardly possible to lay down laws. Each case has a law of its own, which law it is the business of the practitioner to discover.

There are some other circumstances to be taken into consideration in determining for or against ovariectomy in particular cases. It has been the impression that ovariectomy is more fatal in very young women: this impression seems still to maintain its ground. It was also the impression that operations on women past the climacteric period were attended with more risk than those performed earlier. The latter does not appear to be a well-founded idea, looking at the results of more recent experience. The nature of the tumour itself appears from statistics to affect the result. From Mr. Clay's tables we learn that in 44 cases where the cyst was *single*, the recoveries were 43 per cent.; while in 172 cases of *polycystic* tumour, the recoveries were 38 per cent. only; in 21 cases of *solid* tumour, the recoveries were 38 per cent. These figures must be taken for what they are worth only; they show that ovariectomy has proved more fatal in the case of composite tumours and solid tumours, but in many cases the greater mortality in the cases of polycystic tumour arose probably quite as much from the adhesions as from the nature of the tumour itself. Thus, in 99 cases where no adhesions were present, the recoveries were 68 per cent.; of 286 cases where adhesions were present, and the operations completed, the recoveries were 51 per cent., and the more extensive the adhesions the less was the number of recoveries. It appears probable that, in future, presence of adhesions will have a less unfavourable effect on the results than is indicated by Mr. Clay's tables. I have seen two or three cases recover well in which the adhesions encountered were very extensive.

The decision for or against ovariectomy should be left to the patient or her friends; it is for them to take the responsibility. It is our duty, firstly, to make a diagnosis as accurate as possible, taking the whole circumstances, past and present, into consideration; secondly, to make to the best of our ability a prognosis of the case, and to lay before the patient and her friends the results arrived at; and if it be possible to state the chances for or against her, numerically, it is better to do so. For reasons which have

been already sufficiently alluded to, it is occasionally most difficult to put our prognosis into a numerical shape, but until we can do so, a decision for or against ovariectomy cannot be come to satisfactorily. And the patient must be informed what are the probabilities of her life being saved by the different methods of treatment, ovariectomy, tapping, &c., respectively.

THE OPERATION OF OVARIOTOMY.

The success of the operation of ovariectomy most unquestionably depends very much on the method of its performance, and the care taken of the patient before, during, and after the operation.

The *preliminary* treatment consists in elevating by every possible means the patient's vital power. For town patients a short sojourn in the country is often useful; for country patients who have to be operated on in town, a short preliminary residence in the latter may be recommended. The food given must be easily digestible, hours regular, the bowels kept moderately open but not loose. The moral treatment is not less important: it certainly adds very much to the patient's chances of recovery when she is herself hopeful on the subject; and means should be taken, appropriate to the case, for inspiring her with courage and resolution. It is essential to possess the services of a good nurse. To provide a room, in a well-drained house, well-lighted, quiet, well-ventilated, and capable of being heated—is, it is hardly necessary to remark, also essential. Hospital patients cannot be satisfactorily treated in wards containing other patients. Absolutely essential it is also that the patient be not subjected to the influence of emanations arising from wounds or from decomposing animal matters. The room selected should be one having no communication with other rooms from which such emanations may possibly arise.

The operation itself should be performed under chloroform. It is very important that the patient should have had no solid food of any kind on the day of the operation, in order to prevent chloroform sickness. Respecting the mode of administration of chloroform certain precautions are necessary. When large quantities of chloroform are given, the operation being a long one, as is not unusually the case, the result is that the patient is liable to suffer from very troublesome and uncontrollable vomiting for some hours afterwards—a circumstance very likely to affect injuriously the result. Dr. Clay has found so much inconvenience in this way from chloroform as to induce him to say that, if he could, he would

do without chloroform. The evil in question is one which can be dealt with only by giving as little chloroform as possible. The really painful part of the operation occupies usually but little time. The air of the room should have a temperature of 60° during and for a short time after the operation; a kettle of water should, especially in dry states of the atmosphere, be kept boiling in the room, so as to maintain the necessary moisture of the air. Hot and cold water, in clean vessels, must be provided in sufficient quantity. The operator and his assistants must be thoroughly free from all suspicion of post-mortem taint, and before the operation the hands of each should be well washed, a strong brush being used for the nails. There are very good reasons for believing these precautions to be very essential ones. If sponges are used they should be large ones, and it is necessary to count them before and after the operation, to see that none are missing. Mr. Baker Brown considers sponges objectionable.

The legs having been well covered up by flannel, the patient is placed on the back, at the end of the operating couch, the legs hanging down or slightly supported. Dr. Tyler Smith prefers the semi-recumbent position, this giving facilities for the tapping part of the operation. The catheter should be used to empty the bladder before proceeding to operate. By means of a strong knife an incision is made from the umbilicus to just above the pubic symphysis, this incision being in the middle line. The several layers of the abdominal walls are successively cut through until the peritoneum is arrived at, and any vessels cut through secured by ligature before proceeding further. Care is now required not to mistake the peritoneum for the cyst wall, a mistake which may be committed. A director should be used as the peritoneum is approached. The first part of the operation is completed when by this incision the ovarian tumour is exposed. Ordinarily this, the *short* incision, as it is termed, is sufficient; later on, it is sometimes found necessary to extend the incision a variable distance above the umbilicus. After the peritoneal cavity is opened, it is necessary to guard against the protrusion of the intestines at the wound. This is effected by the assistants, one on each side; who are directed to carefully maintain the edge of the incision in apposition with the surface of the cyst. If the intestines escape, they are pressed back by means of flannel wrung out of warm clean water. Of flannels for this purpose a sufficient number should be provided. The incision first made may be sufficient to allow of the extraction of the tumour without lessening the size of the tumour, but gene-

rally this lessening is necessary; and the operator having ascertained that the completion of the operation is possible, and having broken down any adhesions met with in the manner to be presently described, a large trochar is thrust into the presenting cyst and its contents evacuated. The best apparatus to use for this purpose is the siphon-trochar invented by Mr. Spencer Wells. It is large, has affixed to it a tube for the passage of fluid, the edges of the opening made can be fastened to the canula, and so any escape of fluid into the peritoneal cavity can be prevented. If the cyst contents be semi-solid, or very gelatinous, this instrument cannot be employed, but ordinarily it is very useful at this stage of the operation. It may be necessary to empty more than one cyst; in this case the second may generally be perforated from the aperture in the first. If the cysts are very small and numerous, it may be necessary to break them up by passing the hand into the centre of the tumour, but before doing so it will be well to be absolutely certain that adhesions such as to prevent completion of the operation are not present. Having thus lessened the bulk of the tumour, it is drawn out at the aperture and supported by the hands of assistants, care being taken that no dragging is allowed. It is evident that unless great care be exercised much mischief may be done at this moment. The tumour having been drawn out, the pedicle is to be secured. Before alluding to this part of the operation we must consider the question of adhesions. On exposing the tumour we may find that it is adherent; and it may be adherent in front, laterally, and, in short, everywhere. The most difficult adhesions to surmount are those between the tumour and the bladder, or the intestines or omentum, but adhesions in other situations are generally not real obstacles. These adhesions are not to be separated by the knife: they are to be carefully broken down by the fingers, by the handle of the scalpel, or by the 'adhesion-clam,' invented by Mr. John Clay for this purpose.* The bleeding from vessels in these adhesions requires to be carefully looked to; it should be arrested by torsion of the vessels, or by ligature, for which latter purpose fine silver wire is the best; a slight continuous drain going on from one of these vessels, after completion of the operation, may destroy the patient. Great care is necessary, when the intestines are adherent, to avoid perforating them; in very long-standing cases the difficulty of avoiding such perforation is or may be very great, and this is in fact an argument

* A description of this instrument will be found in the *Medical Times and Gazette*, vol ii. 1862.

against operations in such cases. If the cyst cannot be separated from the intestines, a piece of the cyst may be cut off and left attached, but in such cases the lining membrane of the cyst should be removed. (Spencer Wells.)

When the tumour is quite clear of all adhesions, and the necessary diminution of its bulk effected, the pedicle is to be secured. In order to perform this part of the operation satisfactorily, the tumour must be properly sustained by assistants. The object is of course to prevent hæmorrhage after the pedicle is cut across, and there is still some diversity of opinion as to the best plan to be pursued. The ordinary method is to transfix the pedicle by a needle armed with a double thread of strong whipcord, the pedicle being then tied in such a manner that the two halves have each a separate ligature. The whole of the pedicle is thus involved in the ligature. It is safer to apply still another ligature round the whole pedicle. Now the pedicle may be long or short; it may be thick or very slender, according to circumstances too obvious to require mention. If the pedicle be thin, the plan just mentioned seems quite unexceptionable. If, however, the pedicle be thick, it is a question whether it would not be best to find out the vessels in it, and to be content with tying these. A special difficulty may occur when the lower part of the tumour is attached by a very short broad pedicle, consisting partly of vessels, partly of adhesions, and it is not easy to determine which is the really important part to secure. In cases of this kind it would be perhaps the better plan to cut away the greater part of the tumour, having first applied roughly a large ligature, and thus to get a better view of the exact conditions and relations of the remaining portion. This could not be always done with safety. When the circumstances admit, as in a case related by Mr. Brown, the different portions of the pedicle may be caught each by a separate clamp, and the difficulty thus got over.

After securing the pedicle the tumour is separated from it, a short distance—half an inch—from the point of ligature, by means of the knife, and the excision is complete.

The next question is, what is to be done with the pedicle? This question is still really undecided. The plan first adopted was to let the pedicle sink into the pelvis, bringing the ends of the ligatures out at the lower margin of the wound. Pus usually formed and escaped by the side of the threads, and the patient was subjected to the effects of an open wound of the peritoneal cavity until the ligatures had separated. Mr. Hutchinson introduced a valuable im-

provement, viz. the use of the clamp, by means of which the pedicle is grasped; and, thus secured, it is then brought to the surface of the abdominal wound, and thus held outside the abdominal cavity. When the pedicle is long, this plan is attended with many advantages, but when the pedicle is very short, such an amount of dragging may be produced by its use that it is, in such cases, of questionable utility. In reference to the use of the clamp it is well to remember, as Dr. Tyler Smith has remarked, that the only two cases of tetanus following ovariectomy have been cases where the clamp was used. Another mode of practice has been adopted in some of Dr. Tyler Smith's cases, viz. to secure the pedicle by ligatures in the ordinary way, to cut it off as near the ligature as is consistent with safety, to cut off the ends of the ligatures close, and to allow the whole to drop into the pelvis, the abdominal wound being completely closed at the end of the operation. This plan has not perhaps yet been tried in a sufficient number of cases to thoroughly test its utility, but so far it seems to answer well. If the vessels only of the pedicle were tied as above suggested, this plan would be probably rendered safer. Mr. Spencer Wells recommends tying vessels alone where the pedicle is short, but *thickness* of the pedicle would seem to indicate this procedure also. Other methods of securing the pedicle, and which contemplate the closure of the abdominal wound at once, are, the use of the *écraseur* to separate the pedicle, or the use of the wire compress invented by Mr. Dixon. Neither of these methods has been sufficiently tried to enable us to arrive at a conclusion as to their practical value. On the whole it may be laid down, that if the pedicle be long, the clamp method of treatment of the pedicle is a good one; if it be short, the safer plan appears to be to adopt Dr. Tyler Smith's plan, but tying only vessels in the pedicle.

Before closing the wound it is necessary to examine the other ovary and to ascertain whether it be sound. If there be a cystic tumour of the other ovary as large or larger than the fist, and of such a character as to render it probable that it would, if left, grow and necessitate a further operation, it should be removed; but it may be questioned whether it is advisable to meddle with it under any other circumstances. The removal of the second ovary would be effected in precisely the same manner as the first, but more easily and expeditiously.

The next step in the operation is the closure of the external wound. But before finally doing so the operator must be sure that all hæmorrhage from adhesions, or elsewhere, has ceased, and all

blood coagula must be removed. Very clean sponges must be finally used to remove any fluids which may have escaped into the pelvic cavity, and no sponges must be left behind. Mr. Baker Brown, as already remarked, considers sponges have a very injurious influence on the peritoneum, and discards them altogether. The edges of the wound are then brought together by hare-lip pins or by simple sutures (for which purpose wire is the best material), as may seem most expedient. But all agree in the advisability of passing the sutures through the peritoneal membrane itself, in order that when the edges of the wound are brought together the cut edges of the peritoneum may touch. Union of the peritoneum it is most important to secure, in order that, if suppuration take place outside, the pus may not pass inwards. The deep sutures having been applied, superficial ones are necessary to maintain the apposition of the cut edges of the skin. If the pedicle be brought outside, it is kept at the lower margin of the wound, and there held by the clamp. A piece of lint dipped in water is next laid on the wound, cotton wool applied, and over that a roller of flannel.

The *after-treatment* requires great attention. The patient must be watched assiduously day and night by a very competent nurse or by a medical attendant. It seems now agreed by most operators that each case must be treated according to its special indications. It has been the practice to maintain a high temperature of the apartment for some days. Mr. Wells has, as it appears to me very properly, ceased to do so, keeping the room well ventilated, dry, and only comfortably warm. The catheter should be used night and morning, or oftener should it appear necessary. Unless there be an indication for it, opium appears on the whole more likely to do harm than good just after the operation. If the patient bears the operation well, no medicine is necessary at first; she must be kept exceedingly quiet. As regards nourishment, no solid food should be given for forty-eight hours; fluid nourishment of various kinds, cold or iced, is given by the mouth; some operators prefer to give nourishment at first only by the rectum in order to avoid risk of sickness. If matters go on favourably, solid food may be given on the third or fourth day, but care must be taken not to overload the stomach. The object should be to keep up the strength of the patient; and the general symptoms, the condition of the pulse, &c., must determine the particular course to be pursued with this end in view.

It not unfrequently happens that the state of the patient just after the operation is one of great exhaustion; or shortly afterwards

vomiting, very difficult to control, may set in. As regards the exhaustion, it is to be overcome by giving a sufficient quantity of brandy-and-water, which, if it appear necessary, may be repeated at frequent intervals subsequently. Iced champagne appears to have been the means of saving several women from dying of exhaustion, prostration, or sickness, consequent on the operation. Creosote is a valuable remedy for the sickness. When pyæmic symptoms set in, the only chance for the patient consists in the administration of large quantities of liquid food by mouth or by the rectum, brandy or champagne, and, as medicine, bark and ammonia. No other treatment affords a chance of success. Opium must be given when pain is present and when the patient is unable to sleep. It is best given in the form of suppository.

Pain in the abdomen, whether of inflammatory character or not, is best relieved by hot poultices, or by flannels wrung out of hot water sprinkled with spirits of turpentine. In two cases related by Mr. Spencer Wells a peculiar result was noticed, viz. formation of pus in the broad ligament close to the uterus—a peri-uterine abscess in fact—and these abscesses had to be opened from the vagina. The abscesses appear to have formed, because in tying the pedicle the plexus of veins surrounding the uterus was implicated. This is likely to occur in cases where the pedicle is very short. The treatment to be pursued when such abscesses form, is to find out, by vaginal digital examination, the spot where the abscess presents, and to puncture it from the vagina. A highly nutritious and ‘supporting’ diet would be necessary; bark and port wine, or such other stimulants as agree best with the patient, would be required.

Diarrhœa, whether alone or associated with pyæmic symptoms, must be treated by administration of opium combined with astringents. •

Lastly, the operation of ovariectomy must be considered as a whole, and some reference made to the principles, so to speak, which must guide us if we are to meet with success in its performance. Dr. Tyler Smith has well and ably urged the great importance of guarding against poisonous external influences, and the observance, in short, of all those precautions which are so essential in ordinary obstetric practice, and by which alone we are able to prevent puerperal fever. The causes of the mortality from ovariectomy are chiefly two, hæmorrhage and peritonitis in its various forms. In some few cases, but a very few, collapse follows the operation. The hæmorrhage is generally preventible by adopting proper

precautions of various kinds. One precaution, particularly insisted on by Dr. Tyler Smith, is the transfixing the pedicle before tying it, as this prevents slipping of the ligature. The chief mortality—48 per cent. according to Mr. Clay—arises from peritonitis. This probably means blood-poisoning, and its effects in various degrees of intensity. It is very certain, at any rate, that the peritonitis liable to occur after ovariectomy is best treated by giving stimulants and remedies of a sustaining and not a lowering character. Dr. Tyler Smith, in speaking of this peritonitis, states that he should treat it ‘by small prompt bleedings, and calomel and opium.’* Mr. Baker Brown regards ‘prompt bleeding as the best and most certain remedy.’ Looking, however, at the peritonitis from the point of view just referred to, it may be questioned whether depletion is advisable. Small doses of opium, the use of hot fomentations, as before directed, and a supporting diet, constitute a plan of treatment more in accordance with what is probably a true theory of the condition of the patient under these circumstances.

TAPPING.—The operation of tapping, alone, must first be considered. This operation is a palliative measure, but in some very rare cases it has proved curative. The operation itself, though apparently simple, is really looking at recorded facts—a somewhat dangerous operation. In about 17 per cent. of the cases, death follows the first performance of the operation, within a few hours or days.† Subsequent operations do not appear to be attended with so much actual and present risk. The operation of tapping is of course only adapted for cases where there is one large cyst filled with fluid, or where, the number of cysts being more considerable, there are one, or possibly two or three, large cysts, the distension produced by which necessitates the adoption of this or some other method of giving relief.

The advantages of tapping are that it affords a ready method of giving, at all events, a temporary relief to the patient, and the (very remote) possibility of cure when the cyst is single.

The disadvantages are the following:—the immediate risk of death—a risk which it is impossible to foresee and impossible wholly to guard against, and which is not apparently associated with any one particular condition of the cyst or cysts; and the fact that as a rule the fluid rapidly accumulates, and the fatal event is apparently, in many cases, somewhat hastened thereby: of this latter fact there seems no doubt. It was William Hunter’s opinion.

* ‘On Ovariectomy,’ *Obstetrical Transactions*, vol. iii. p. 59.

† Result of 130 cases analysed by Kiwisch, *op. cit.*

Mr. Baker Brown finds that 'on the whole the life of the patient is shortened' by tapping.

In some cases patients are tapped, and no refilling of the cyst takes place for some time, for months or for even longer—to a distressing extent at least—but as a rule the cyst refills with rapidity, and to relieve the patient tapplings are necessary again and again, the interval becoming progressively shorter and shorter after each operation.

A further disadvantage of tapping is, that by setting up adhesions any subsequent attempt to perform ovariectomy is rendered more difficult; and it will be seen, on analysing Mr. Clay's statistics, that a case of ovarian disease, of which 'repeated previous tapping' forms an element in the history, is less likely to prove a favourable case for ovariectomy.

It seems probable that the greater danger of a first operation of tapping, as compared with second or subsequent ones, depends on the fact that adhesions are not usually present at the time of the first operation; and consequently the peritoneum itself is subjected to influences in cases of first operation which are, or may be, inoperative subsequently. The escape of fluids from ovarian cysts into the peritoneal cavity is attended often with no apparent prejudicial effect whatever, but occasionally it is not so, and peritonitis of fatal character may be thus set up. The danger connected with tapping does not depend on this circumstance alone; another cause of death is hæmorrhage from puncture of a large vessel in the abdominal parietes; another is hæmorrhage into the ovarian cyst itself from puncture of a vessel belonging to the cyst. These are accidents all more or less unavoidable and difficult to guard against with absolute certainty. Another cause of death after tapping is inflammation of the cyst itself, for severe inflammation is sometimes set up within the cyst by the operation.

The operation of tapping is usually performed through the abdominal parietes, when the object is palliative. The operation of tapping from the vagina is generally performed with other views, to be spoken of presently. In some cases ovarian cysts have been evacuated by tapping from the rectum.

Tapping was for a long time, and still is to a great extent, and with some practitioners, the only operation attempted in cases of ovarian dropsy. The indications for tapping will necessarily vary according as we adopt the opinion that 'in certain cases ovariectomy is justifiable and proper,' or the reverse. In some cases tapping is impossible, as when the tumour consists of many cysts,

or when it is wholly solid: these cases do not require to be discussed. But when we have before us a case in which no operative procedures have been yet attempted, then it is that we feel the full weight of the difficulty with which the forming of a right decision is attended. If the distension of the abdomen for which the relief is necessary has been slowly advancing, there appears no reason why tapping should be postponed; but if it be recent, it is advisable to wait longer before operating—that is to say, when the cyst is single, and no indication for ovariectomy is present. Such appears to be the most judicious course to follow in cases *where tapping is the selected treatment*. If we resolve to apply pressure afterwards, in the manner to be presently described, then early tapping is the best in all cases. And the same would seem to hold good when iodine injection is to follow the tapping. On the whole, it seems that if we begin with the determination *never* to do more than tap the patient, the tapping had better be postponed to the last moment, but if we discard this—the ancient mode of viewing the question—and do not contemplate leaving the patient to her fate, whatever that may be, then early tapping is the best.

In some instances the result of examination is, that we find it difficult to say whether the whole of the tumour be due to the presence of a single large cyst, or not, and in which the presence of *other* cysts in a state of growth at the base of the tumour would determine us on advising ovariectomy in preference to tapping. In such cases it may be deemed better to pursue the following course:—to tap the cyst and ascertain, in the manner previously pointed out (see p. 411), whether such secondary cysts be present or not, and, in the event of such being found, to proceed at once with the more radical operation of ovariectomy.

In some cases, as where the tumour is made up of two or three large cysts, it has been found possible to evacuate the contents of all through the original opening; but unless under very exceptional circumstances, this procedure does not appear to be entitled to commendation. If the distension present demands relief by operation, the best operation under these circumstances is that of ovariectomy.

Mode of performing the Operation of Tapping.—The readiest, and on the whole the safest, method of performing the simple operation of tapping is to place the patient on the back, and to allow the fluid to escape through a flexible tube into a vessel placed by the side of the bed or couch. The best situation at

which to make the perforation in the abdominal walls is the median line; there being thus less risk of wounding vessels. It is best to make a small incision in the skin first, in order to allow more easily the trochar to pass through the abdominal wall. A large canula and trochar are best, and if the canula have attached to it, as in Mr. Spencer Wells's instrument, a long india-rubber tube, the contents of the cyst escape on withdrawal of the trochar. It is hardly necessary to observe that the bladder should be very carefully emptied by the catheter before proceeding to the operation. If during the operation the canula become choked up, a long probe should be used to remove the obstruction. During the escape of the fluid gentle pressure may be exercised on the abdomen. After completion of the operation, a wide flannel bandage should be carefully applied, the wound being previously covered over by a piece of lint folded in form of a compress. Should fainting occur during the operation, brandy or other stimulants must be given, and the cyst evacuated more slowly. Quiet after the operation is very essential, and the body should be kept as nearly as possible immovable for at least twenty-four hours after the operation, the catheter being used to evacuate the bladder.

The cyst inflammation liable to arise after tapping is accompanied with great pain, great tendency to nausea, or actual vomiting, and general symptoms of peritonitis. Warm poultices, iced drinks to allay the vomiting, are the best remedies in such cases. It has been customary to recommend application of leeches and administration of calomel, but I should be disposed to trust more to remedies of a less lowering character. Small quantities of stimulants—brandy or champagne—very frequently administered, are more likely to sustain the patient in resisting the 'pyæmic' tendency of the affection, than mercury and depletion.

TAPPING FOLLOWED BY PRESSURE.—This is a method of treating cases in which the disease is limited to one or two large cysts, which has been practised and advocated by Mr. Baker Brown, and with results which, in his hands and in those of some other practitioners, have appeared to be satisfactory in a certain proportion of cases.

The method of treatment in question consists in first emptying the cyst, and then applying compresses of lint or linen, so arranged as to present a convex surface adapted accurately to the concavity of the pelvis. Over these compresses straps of adhesive plaster are applied, so as to embrace the spine, meeting and crossing in front, and extending from the eighth dorsal vertebra to the sacrum. Over all a broad bandage is placed. The crest of

the ilium is protected by buffalo skin or amadou plaster.* The pressure is to be steadily kept up, and regulated according to circumstances, and 'medicines to stimulate the functions of the various abdominal organs, to correct faulty secretions, and generally to improve the health and strength, should also be administered.'

The number of cases hitherto published is hardly sufficient to afford a just appreciation of the merits or demerits of the plan in question; but they are enough to induce the expectation that some cases may be very materially benefited by it. It is objected to this method of treatment that it is painful, difficult to carry out, and tedious. Mr. Brown denies that this is true, and states that no great or unbearable inconvenience is necessarily involved. Further, it is urged (by Dr. West) that the cases benefited by it are the very cases in which a cure from tapping alone is sometimes observed. But a careful examination of the facts appears to bear out the conclusion, that this explanation does not account by any means for *all* the good which has been derived from the tapping and pressure combined, and reasons have already been given (see p. 579) for the belief that, by means of pressure so applied, the development of further cysts may possibly be prevented. This would be an additional argument for making trial of this method in favourable cases—that is to say, where the cyst is single, where no adhesions are present, where the contents of the cyst are clear and not albuminous, and where time and the condition of the patient admit of its persevering application. (Baker Brown.)

TAPPING FOLLOWED BY IODINE INJECTION.—This method of treatment consists in first tapping and evacuating the cyst, and then throwing into its cavity a fluid consisting of equal parts of tincture of iodine, to which a little iodide of potassium is added, and water. Mr. Spencer Wells prefers a watery solution, 30 grs. of iodide of potassium and 20 grs. of iodine in one ounce of water. This fluid is left in for a few minutes, the cyst being slightly kneaded from without, and it is then usually allowed to escape by the tube through which it was injected. The effect of this procedure, when attended with success, is to excite inflammation of the interior of the cyst, or so to alter the condition of the interior that there is no further accumulation of fluid.

This operation is only adapted for cases where there is only one cyst, or possibly two large ones, and where there is no other disease

* *On Ovarian Dropsy.*

of the ovary. In cases where the cysts are numerous, it is quite inapplicable; very little benefit could be expected from it in cases where further cyst development is in progress.

Boinet treated 45 cases in this manner: of these, 68 per cent. were cured after one or more operations, 20 per cent. died from the effects of the operation, and in 11 per cent. it failed. Dr. West employed it in eight cases. No death occurred; in one the patient was cured, in one there was marked retardation; in two, cure of the first cyst, and retardation; in one slight improvement, in one possible retardation, in one operation not completed, and in one there was no benefit derived. Dr. Simpson states that he has employed the operation and with advantage in a considerable number of cases. Dr. Tyler Smith states that of ten cases treated by this method, two died from the effects of the operation, and in only two were the results satisfactory.

The drawbacks to the operation seem to be, the uncertainty that it will cure, and the necessity, in many cases, for repetition of the operation two, three, or more times, before a cure can be obtained. It is difficult at present to say whether or not the operation is materially more dangerous to the patient than simple tapping, but this further experience will doubtless show.

TAPPING FROM THE VAGINA.—A method of treatment of ovarian cysts, which has not as yet attracted much attention in this country, but which appears to have been practised in a certain number of cases with advantage in Germany, first by Kiwisch, consists in tapping the cyst through the vagina, maintaining the opening thus made in a fistulous state, and obliterating the cyst by the inflammatory process set up. It is applicable chiefly to moderately large simple cysts, not exceeding the size of a large pregnant uterus. The opening made into the cyst is the size of the finger; a tube is left in this opening for several weeks, and warm water is daily injected through the tube. Dr. West recommends, in place of the heavy tube used by Kiwisch, that a long elastic tube the size of a No. 12 catheter be used; this is retained by means of a framework placed in the vagina, and having a collar into which the tube is fixed. A careful attention to the diet and regimen of the patient is necessary while these operative measures are in progress. The cyst inflammation set up requires to be treated, according to Dr. West, by vigorous antiphlogistic measures. The operation is necessarily difficult when the ovarian cyst does not project well into the vagina, or when the vagina itself is narrow.

The results claimed for the operation by Kiwisch are of the best kind, viz. the radical cure. Scanzoni, following Kiwisch's steps, has operated in this manner 14 times, and, as he asserts, 8 of the cases were completely cured. The results obtained by Dr. West in 3 cases were encouraging. Mr. Clay,* in a note on this subject, expresses an opinion favourable to the extension of the operation in this country, and there appear to be very good grounds for the expectation that in many cases great benefit would be derived from it. There are advantages belonging to the operation which have not been as yet alluded to, but which deserve mention in this place. They are as follows:—In the operation of tapping from the vagina, and making a perforation in the cyst wall in this situation, we operate on that part of the cyst wall in immediate contiguity with the other parts of the ovary. In cases where new cysts are being formed, it is likely therefore that the puncture and inflammatory action set up thereby may have a good effect in destroying these new cysts. It may be found possible hereafter to devise some modifications of this operation, by which the ovary itself may be so destroyed or broken up, that no further development of cysts can occur. Is it not rational to presume that, in some of the cases recorded by Kiwisch and Scanzoni, the cure has been radical because something of the kind here alluded to has occurred?

As a simply palliative operation, tapping from the vagina is less generally applicable than tapping from the abdomen, from the fact that the tumour is more often abdominal than pelvic. In view of the possibility of obtaining a radical cure when performed after the method of Kiwisch, it appears chiefly deserving of increased attention, but the number of cases in which it is likely to be applicable is by no means considerable.

Analogous to the operation just described, is the *puncture of the cyst from the rectum*, a mode of procedure which requires no particular comment.

There are some other surgical procedures which have been advocated and practised at various times, but which have not been found very successful; generally, for very obvious reasons.

Maintaining a fistulous opening into the cyst by means of tubes passed through the abdominal parietes.—In Mr. Baker Brown's work will be found an account of some cases in which this operator, improving on a former procedure somewhat similar,

* *Op. jam cit.* p. 146.

adopted the expedient of making a semilunar incision in the abdominal wall, stitching the sac to the wall, and then maintaining a fistulous opening into the sac. The cases ended unfavourably. The operation of ovariectomy, whenever it is practicable, certainly appears to be preferable to it, as Mr. Brown himself remarks.

The same operator has, in some instances, performed *excision of a portion of the cyst wall*, by which the cavity of the cyst and that of the peritoneum are thrown into one, and the event which occurs in accidental rupture of the cyst into the peritoneum imitated. The same plan has been followed by some other practitioners. It appears that the operation is very dangerous, amongst other reasons, owing to the great liability to hæmorrhage, and the possible necessity for tying many vessels. The operation does not appear to be one which is at all to be recommended. Mr. Brown himself says, that the statistics relating to it ‘certainly put this plan of operation in a very unfavourable light.’

CHAPTER XIV.

TREATMENT OF PERI-UTERINE HÆMATOCELE; OF PELVIC ABSCESS;
AND OF DISEASES OF THE FALLOPIAN TUBES.

PERI-UTERINE HÆMATOCELE.—Means of arresting Hæmorrhage; Treatment of Pain, Collapse, &c.—The Question of Puncture considered.

PELVIC ABSCESS.—Importance of true Estimation of the Nature of the Disease—Local Depletion—Stimulants—Rest—Internal Remedies—Puncture of the Abscess—Subsequent Treatment.

DISEASES OF FALLOPIAN TUBES.—Dropsy; Treatment by Puncture—Fallopian Pregnancy, and Hæmorrhage from Rupture of Tube.

TREATMENT OF PERI-UTERINE HÆMATOCELE.

THE number of cases of peri-uterine hæmatocele hitherto placed on record, is insufficient to enable us to come to any final conclusion as to the best treatment of the affection, or, to speak more correctly, of the accident, now under consideration. When death occurs, it takes place usually either from hæmorrhage and collapse, or from peritoneal inflammation; and the indications are, to arrest the hæmorrhage, to prevent inflammation, and, in certain cases, to promote external evacuation of the exuded products.

First, as regards the hæmorrhage. If the arrest of hæmorrhage be the chief indication, which will be judged of by the intensely pallid and faint state of the patient, our object should be to promote coagulation of blood already effused, and to check the flow of blood to the pelvic organs. One of the most important elements in the treatment, then, should be the observance of absolute rest in the horizontal position, not only during the attack itself, but between and during the succeeding menstrual period. Application of cold by means of bladders containing ice, placed over the pubes and the lower part of the abdomen, is of essential service. As a further help, the injection of iced water into the rectum might be suggested. The administration of food and drink requires careful consideration. If the patient were previously anæmic, or if there were reason to believe that the hæmorrhage was produced or kept

up by the watery or vitiated character of the circulating fluid, a more liberal diet would be necessary; but under other circumstances, and during the acute stage, food and drink should be moderate in amount. For the relief of the great prostration and collapse present in many cases, brandy or other stimulants should be liberally administered. Internal remedies—hæmostatics, as they are termed—would seem to promise little assistance in checking the hæmorrhage under these circumstances; those which have been most recommended are iron, rhatany, ergot, sulphuric acid, &c.

The question as to the propriety of puncturing the tumour is one on which some difference of opinion exists; some practitioners advocating it, while others reject it, or limit it to those cases in which the effusion is not intra-peritoneal at all. As a rule, it is better to interfere surgically as little as possible, for, by making a puncture, there is risk of giving rise to inflammation of the interior of the sac, to purulent infection, and the fatal consequences of the same. Trousseau,* in an admirable clinical lecture on this subject, expresses himself as opposed to puncture. Professor Braun, of Vienna, states that in 6 cases where puncture and evacuation of the sac was performed, a cure followed. In 3 cases he adopted a passive treatment, with like success.

Dr. Simpson recommends that an opening should be made, if the tumour be enlarging from inflammation or otherwise. Nélaton and Voisin limit surgical interference to cases where there is violent pain with increase in size, and threatened rupture into the peritoneal cavity.

The view taken of this question by Dr. Matthew Duncan is to the following effect:—If the blood remain in form of clot, it is likely to be absorbed, and in such a case puncture is not required. When liquefaction occurs, Dr. Duncan believes that the blood becomes mixed with pus and is almost sure to be discharged, and in these cases operative interference may be required. The practitioner has then to determine whether he will leave the case to nature, or interfere; in some cases, it is often good practice to open the sac, in others it is the only good practice. The operation is undertaken to avert a threatened rupture, or with the view of shortening and assuaging the sufferings of the patient. Dr. M'Clintock, who has had a considerable number of cases under his care, says:—‘With my present impressions, I would not be inclined

* *L'Union Méd.* Dec. 1861.

to resort to the trochar, unless urgent symptoms were manifested in consequence of the bulk or mechanical pressure of the tumour; and not even then, unless it were in the chronic stage.*

The difficulties of the operation are often not inconsiderable, and great care is required not to wound the bladder or other viscera. A sound should be passed into the bladder previously, in order to render evident the relation of this viscus to the tumour. In operating, the point which projects most into the vagina, and as nearly in the middle line as the nature of the case admits, should be chosen. The first opening made should be small, but when it is perfectly certain that the cavity is reached, it should be enlarged. A large opening is necessary, to allow of escape of clots. Care should be taken to prevent access of air to the cavity, and slight pressure should be afterwards continuously applied over the abdomen. If pyæmic symptoms supervene, they must be treated by copious use of stimulants, by bark, ammonia, &c. Injection of the cyst with water is not to be recommended, unless the discharge has become putrescent.

With respect to those cases where the effusion extends high up into the abdomen, it may be a question whether to perform an abdominal operation or not. In a case related by Dr. Duncan, paracentesis was performed, and the patient recovered. Such an operation is only admissible in exceptional cases, and where the tumour is very large.

Next, with reference to the peritonitis. The great pain present in these cases is of itself an evil, and it must be treated by exhibition of opium in sufficiently large doses. The most appropriate anti-inflammatory remedies, supposing such to be used, would seem to be local depletion by means of the application of leeches over the hypogastrium; such local depletion will also lessen the internal effusion of blood. Poultices and warmth, so useful in ordinary peritonitis, would seem absolutely contra-indicated, inasmuch as the hæmorrhage would be probably increased by their use.

The subsequent management of the patient will require caution. Everything calculated to give rise to excitement or congestion of the genital organs must be avoided. The patient must be enjoined not to take excessive exercise, to live moderately, but well. The anæmic condition of the patient generally indicates the employment of tonics, of ferruginous preparations, &c., care being

* *Op. cit.* p. 271.

taken, while restoring the strength of the patient, to prevent premature exercise of this strength. Sexual intercourse could not with propriety be allowed until after the lapse of some months at least. A patient who has once been the subject of peri-uterine hæmatocele requires continuous and careful watching for a considerable period; exertion of any kind, however slight in degree, may induce recurrence of the mischief, if undertaken too early.

TREATMENT OF PELVIC ABSCESS.

Pelvic abscess generally comes before us as an effect or consequence of parturition, and there can be no doubt that the formation of post-puerperal abscesses in the pelvis is due to the same kind of influence—more limited in its operation—as that which proves fatal in so many cases of puerperal fever. Virchow considers the diffuse peri-metritic inflammation of puerperal women to be a sort of internal erysipelas. Dr. West considers that the analogies of the affection are ‘to be found among those inflammations of the cellular tissue, which, succeeding to operations, advance with great rapidity, and terminate soon in the formation of enormous quantities of matter.’ This view of Dr. West’s is undoubtedly correct, and the whole clinical history of pelvic abscess is corroborative of the idea that we have here to do with a local pyæmic action. In the worst forms of puerperal pelvic abscess the most vigorous stimulant treatment is absolutely necessary to save the patient from death, and the same holds good with abscesses the result of amputations, &c. It is reasonable to infer that, in milder forms of the affection, the same kind of treatment is best.

The general principles which should then guide us in the treatment of pelvic abscess, may be deduced from the foregoing considerations. In the first stage of the affection, and before pus has formed, it may be advisable to apply a few leeches over the painful spot, which is generally in one or other of the iliac or inguinal regions. Leeches have in some cases been applied to the uterus itself. Neither leeches, nor indeed depletion of any kind, are indicated when the inflamed part has suppurated, or when the patient is in an anæmic state, or where the abscess follows on puerperal fever. I have never myself found depletion necessary, or even admissible. Hot poultices to the lower part of the abdomen are of the greatest value; they should be large, thick, and spread over a large surface.

Mr. Hilton, in his admirable lectures, lately delivered at

the Royal College of Surgeons, has forcibly called the attention of the profession to the beneficial influence of *rest* in the treatment of many surgical affections. Dr. M'Clintock * insists strongly on the great importance of rest in the treatment of pelvic abscess. Following, therefore, the eminent authorities now alluded to, it may be laid down that in all cases of pelvic abscess it is the best practice to see that the patient be kept in the recumbent posture for some considerable time. The cure of cases of pelvic abscess is often a very tedious affair; the pus burrows in the pelvic cavity beneath and between the different layers of fascia, and sometimes even, when the cavity of the abscess is very large, it exhibits no tendency to point or to undergo spontaneous evacuation. It is rational to suppose that the termination of the case will be favoured by a due observance of rest. It may be questioned whether it is advisable to give mercury in cases of pelvic abscess. Dr. West recommends it to the extent of producing slight soreness of the mouth. Dr. M'Clintock employs mercury in the acute and sub-acute stages of the affection. On the view that the affection is a simply inflammatory affection, mercury would be admissible; but if we regard pelvic abscess in the same light as abscesses the result of surgical operations, mercury would seem to be contra-indicated. In bad cases of pelvic abscess, mercury is most certainly inapplicable; the tolerance of mercury in milder cases is no proof of its efficacy as a curative agent, and, notwithstanding the high authority which can be given for the use of mercury in the treatment of pelvic abscess, I do not employ it, still less recommend its continuous administration. Confirmatory of the opinion here given, is a fact mentioned by Dr. M'Clintock, viz. that a new attack of the disease showed itself in one case, while mercurial pyalism was actually present. The pain, sleeplessness, and general discomfort experienced by the patient, are best relieved by opium. A ready means of administering it is to throw a small quantity of laudanum into the rectum. The diarrhœa frequently present requires to be controlled by opiates together with astringents, of which latter catechu is perhaps the best.

The patient should be kept in a well-aired, moderately warm room. The pelvis and the body generally should be sponged night and morning with tepid water, care being taken not to chill the patient. A vaginal injection of tepid water once or twice a day gives great comfort, if carefully done.

* *Op. cit.*

The diet of the patient requires the most careful attention. From the first, the patient should be fed well. Beef-tea, soups, milk, eggs, according to the appetite, may be given in good quantity. Port wine or bottled porter is to be administered judiciously, and with due regard to the digestive capabilities of the patient. It is impossible to say what quantity of food or stimulant may be required: this must be a matter of experiment; when the abscess is discharging, large quantities will always be required, and in many cases, before the opening has occurred, it is necessary to put the patient on a very liberal diet indeed. Medicines which help her to take nourishment, such as cod-liver oil, dilute nitric acid, with bitter infusions, are often of service. Bark is a most valuable medicine in chronic cases. A liberal diet, rest, bark, and occasional small doses of opium—this is, in brief, the best treatment for the majority of cases which come before us. As long as any induration can be felt from the vagina or above the pubes, the patient cannot be pronounced convalescent, nor is it safe to allow her to resume her ordinary course of life.

The question as to the evacuation of the abscess is an important one. The natural evacuation is undoubtedly the best, unless this is procured at the expense of permanent disorganisation of the pelvic viscera; but it is certain that in many cases artificial evacuation hastens the cure very materially. The selection of the time and place for puncture—if early puncture be decided on—requires great judgment. If the abscess be opened from the vagina, extreme care is necessary to avoid wounding the pelvic viscera; a soft point may be chosen for the puncture, if there be no actual pointing of the abscess. • The great experience of Dr. M'Clintock has led him to conclude that those cases end most favourably which are evacuated externally. In the majority of cases the abscess is high up, and only accessible from above the pubes or in the inguinal region. Where the abscess points at some part of the abdominal wall, it is better to wait until the skin is thoroughly implicated. If a puncture be made from above, it should be made as near to the pelvic brim as possible, in order to avoid the peritoneum, and if the swelling extend far out towards the iliac region, the puncture should be made close to Poupart's ligament; to avoid the sheath of the crural vessels, the puncture should be made external to the centre of Poupart's ligament. Dr. Tyler Smith adopts a plan of opening the abscess in this situation, which has appeared to me to be successful in preventing introduction of air, viz. the making a valvular

incision. The bistoury is the best instrument for the operation. When fluctuation is clearly evident, the operation is devoid of uncertainty, but, under other circumstances, there is risk of missing the abscess altogether. Unless, therefore, the position of the abscess be otherwise than by fluctuation distinctly indicated, it would be better to wait than to operate early, although by so waiting some time would be lost. When an abscess has been opened, warm linseed poultices form the best application: a compress of cotton wool should be applied over the whole hypogastric region, but it is a mistake to apply it very firmly, our object being to allow the contents of the abscess to escape slowly.

Mercurial inunctions, recommended in chronic cases, appear objectionable. Painting the lower part of the abdomen with iodine appears sometimes of service where induration remains, and it is desirable to remove it. When the abscess burrows in the thigh, strapping of the thigh will prove useful, the foot and leg being previously bandaged.

DISEASES OF THE FALLOPIAN TUBES.

There is very little to be said concerning the treatment of the diseases of this portion of the generative organs. *Dropsical distension of the tube* is an affection for the relief of which puncture through the vaginal wall has been practised, by means of a small canula and trochar. Dr. Simpson * and Dr. Priestley have related cases in which the serous contents of the enlarged Fallopian tube have been drawn off in this manner. The suffering and inconvenience produced by the affection in question are very rarely, however, such as to call for interference, and the affection itself is one which is better known to us from the results of post-mortem examination than from clinical experience.

Fallopian pregnancy is a condition which generally terminates in rupture of the tube, and the recurrence of fatal hæmorrhage into the peritoneal cavity. If it were possible to make an exact diagnosis of these cases of rupture and hæmorrhage during life, it would undoubtedly be better to open the abdomen, and endeavour to secure the bleeding vessels, than to allow the patient to die from hæmorrhage. No operation of the kind has ever been attempted, but the subject formed matter of discussion

* *Med. Times and Gaz.* 1860, vol. i. p. 641.

at a recent meeting of the Obstetrical Society. The chief difficulty lies in the diagnosis, for, until the patient is dead, the real nature of the case is not generally detected ; such, at least, has been the experience of most practitioners. Increased accuracy of diagnosis of the diseases of the female generative organs may, perhaps, result in the more frequent recognition of this formidable accident sufficiently early for measures to be devised and carried out by which life may be saved.

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